ONKYO

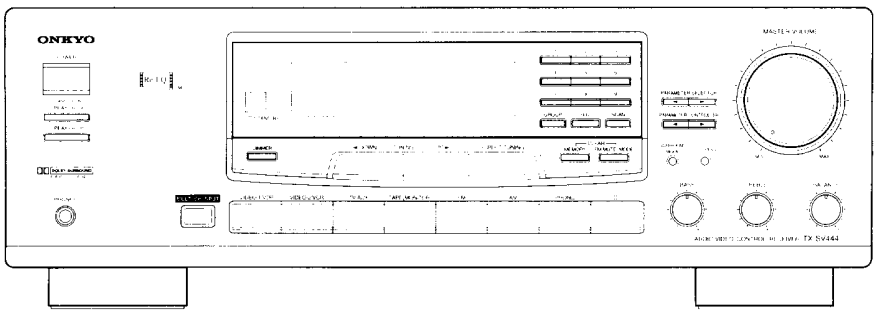
TX-SV444

Audio Video Control Receiver

TX-SE500

Audio Video Karaoke Control Receiver

Instruction Manual



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Thank you for purchasing the Onkyo Audio Video Control Receiver.
Please read this manual thoroughly before making connections and turning on the power.
Following the instructions in this manual will enable you to obtain optimum performance and listening enjoyment from your new Audio Video Control Receiver.
Please retain this manual for future reference.

Features

- **70 Watts per channel into 8 ohms or 60 Watts to front three channels plus 20 Watts per channel for surround**
- **5-Channel discrete output stage drive for optimum AC-3/DVD performance (with external decoder)**
- **All-channel low-impedance drive**
- **Proprietary Lucasfilm Re-Equalization circuitry**
- **Karaoke function with 2 mic inputs, voice cancel, pitch, echo and separate volume controls (TX-SE500)**
- **Dolby* Pro Logic, Hall and Live surround**
- **Intelligent Power Management (IPM) turn on whole system with TV**
- **3D-Bass for enhanced low frequencies**
- **Dedicated line-level subwoofer output**

*Manufactured under license from Dolby Laboratories Licensing Corporation. "Dolby", the double-D symbol ⧈, and "Pro Logic" are trademarks of Dolby Laboratories Licensing Corporation.

ATTENTION FOR BRITISH MODEL

Replacement and mounting of an AC plug on the power supply cord of this unit should be performed only by qualified service personnel.

- IMPORTANT

The wires in the mains lead are coloured in accordance with the following code:

Blue : Neutral
Brown : Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:
The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.
The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

- IMPORTANT

A 5 amp fuse is fitted in this plug. Should the fuse need to be replaced, please ensure that the replacement fuse has a rating of 5 amps and that it is approved by ASTA or BSI to BS1362. Check for the ASTA mark or the BSI mark on the body of the fuse.
IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OF SAFELY. THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13 AMP SOCKET.
If in any doubt, please consult a qualified electrician.

FOR U.S.A. MODEL

Note to CATV system installer:

- This reminder is provided to call the CATV system installer's attention to Section 820-40 of the NEC which provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

FCC Information for User

CAUTION:
Changes or modifications not expressly approved by the manufacturer for compliance could void the user's authority to operate the equipment.

NOTE:
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate ratio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment dose cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between other equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which other receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FOR CANADIAN MODEL
POUR LE MODELE CANADIEN

- For models having a power cord with a polarized plug.

CAUTION: TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.

- THIS DIGITAL APPARATUS DOES NOT EXCEED THE CLASS B LIMITS FOR RADIO NOISE EMISSION FROM DIGITAL APPARATUS SET OUT IN THE RADIO INTERFERENCE REGULATIONS OF THE CANADIAN DEPARTMENT OF COMMUNICATIONS.

- Sur les modèles dont la fiche est polarisée.

ATTENTION: POUR ÉVITER LES CHOCS ÉLECTRIQUES, INTRODUIRE LA LAME LA PLUS LARGE DE LA FICHE DANS LA BORNE CORRESPONDANTE DE LA PRISE ET POUSSER JUSQU'AU FOND.

- L'INTERFÉRENCE RADIO ÉLECTRIQUE GÉNÉRÉE PAR CET APPAREIL NUMÉRIQUE DE TYPE B NE DÉPASSE PAS LES LIMITES ÉNONCÉES DANS LE RÈGLEMENT SUR LES PERTURBATIONS RADIO ÉLECTRIQUES, SECTION APPAREIL NUMÉRIQUE. DU MINISTÈRE DES COMMUNICATIONS.

FOR EUROPEAN MODEL

Declaration of Conformity

We, ONKYO EUROPE
ELECTRONICS GMBH
INDUSTRIESTRASSE 18/20
82110 GERMERING,
GERMANY

CE

declare in own responsibility, that the ONKYO product described in this instruction manual is in compliance with the corresponding technical standards such as EN55013, EN55020, EN60555-2, -3 and EN60065

GERMERING,GERMANY

H. YAMAZOE

ONKYO EUROPE ELECTRONICS GMBH

WARNING:
TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CAUTION:
TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

WARNING
RISK OF ELECTRIC SHOCK DO NOT OPEN

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Important Safeguards

1. **Read Instructions** – All the safety and operating instructions should be read before the appliance is operated.
2. **Retain Instructions** – The safety and operating instructions should be retained for future reference.
3. **Heed Warnings** – All warnings on the appliance and in the operating instructions should be adhered to.
4. **Follow Instructions** – All operating and use instructions should be followed.
5. **Water and Moisture** – The appliance should not be used near water – for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, and the like.
6. **Carts and Stands** – The appliance should be used only with a cart or stand that is recommended by the manufacturer.

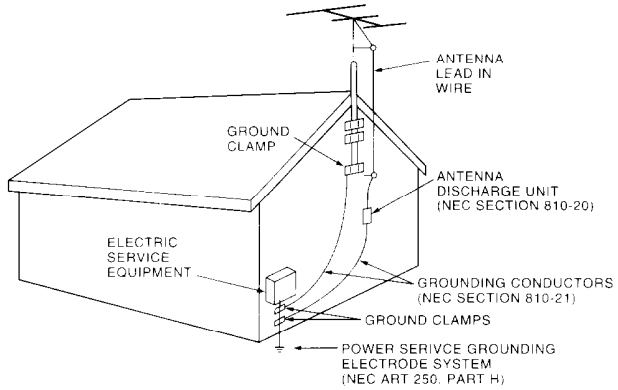
6A. An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

PORTABLE CART WARNING

S3125A

7. **Wall or Ceiling Mounting** – The appliance should be mounted to a wall or ceiling only as recommended by the manufacturer.
8. **Ventilation** – The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or if placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings, there should be free space of at least 20 cm (8 in.) and open up behind the appliance.
9. **Heat** – The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.
10. **Power Sources** – The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.
11. **Polarization** – If the appliance is provided with a polarized plug having one blade wider than the other, please read the following information:
    The polarization of the plug is a safety feature. The polarized plug will only fit the outlet one way. If the plug does not fit fully into the outlet, try reversing it. If there is still trouble, the user should seek the services of a qualified electrician. Under no circumstances should the user attempt to defeat the polarization of the plug.
12. **Power-Cord Protection** – Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, especially near plugs, convenience receptacles, and the point where they exit from the appliance.
13. **Cleaning** – The appliance should be cleaned only as recommended by the manufacturer.
14. **Power Lines** – An outdoor antenna should be located away from power lines.
15. **Nonuse Periods** – The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.
16. **Object and Liquid Entry** – Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
17. **Damage Requiring Service** – The appliance should be serviced by qualified service personnel when:
    A. The power-supply cord or the plug has been damaged; or
    B. Objects have fallen, or liquid has been spilled into the appliance; or
    C. The appliance has been exposed to rain; or
    D. The appliance does not appear to operate normally or exhibits a marked change in performance; or
    E. The appliance has been dropped, or the enclosure damaged.
18. **Servicing** – The user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.
19. **Outdoor Antenna Grounding** – If an outside antenna is connected to the receiver, be sure the antenna system is grounded so as to provide some protection against voltage surges and built up static charges. Article 810 of the National Electrical Code, ANSI/NFPA 70, provides information with regard to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna-discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Figure 1.

FIGURE 1:
EXAMPLE OF ANTENNA GROUNDING AS PER NATIONAL ELECTRICAL CODE


ANTENNA LEAD IN WIRE
GROUND CLAMP
ANTENNA DISCHARGE UNIT (NEC SECTION 810-20)
ELECTRIC SERVICE EQUIPMENT
GROUNDING CONDUCTORS (NEC SECTION 810-21)
GROUND CLAMPS
POWER SERIVCE GROUNDING ELECTRODE SYSTEM (NEC ART 250, PART H)

NEC – NATIONAL ELECTRICAL CODE

S2898A

Precautions

1. Warranty Claim

You can find the serial number on the rear panel of this unit. In case of warranty claim, please report this number.

2. Recording Copyright

Recording of copyrighted material for other than personal use is illegal without permission of the copyright holder.

3. AC Fuse

The fuse is located inside the chassis and is not user-serviceable. If power does not come on, contact your Onkyo authorized service station.

4. Care

From time to time you should wipe the front and rear panels and the cabinet with a soft cloth. For heavier dirt, dampen a soft cloth in a weak solution of mild detergent and water, wring it out dry, and wipe off the dirt. Following this, dry immediately with a clean cloth. Do not use rough material, thinners, alcohol or other chemical solvents or cloths since these could damage the finish or remove the panel lettering.

5. Power

WARNING

BEFORE PLUGGING IN THE UNIT FOR THE FIRST TIME, READ THE FOLLOWING SECTION CAREFULLY.

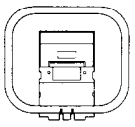
- Some models are designed for use only with the power supply voltage of the region where they are sold.

European and Australian models:	AC 230V, 50Hz
U.S.A. and Canadian models:	AC 120V, 60Hz
Worldwide model:	AC 220-230V/120V switchable, 50/60Hz

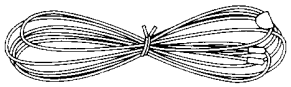
- **Voltage Selector (Rear Panel)**
  Worldwide models are equipped with a voltage selector to conform to local power supplies. Be sure to set this switch to match the voltage of the power supply in your area before plugging in the unit. Models without a voltage selector can only be used in areas where the power supply is the same as that of the unit.

Turning off the power switch does not shut off the power completely. So the power cord should be removed from AC outlet when not in use for a prolonged time.

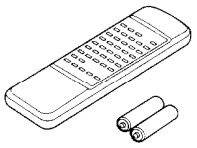
Supplied accessories



1 AM loop antenna

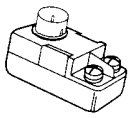


1 T-shaped FM antenna

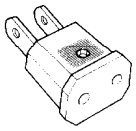


1 Remote controller
(RC-326S for TX-SE500, RC-327S for TX-SV444)
2 Batteries (size AA, R6, or UM-3)

The following accessories are only available for worldwide models.



1 75/300 ohm antenna adaptor



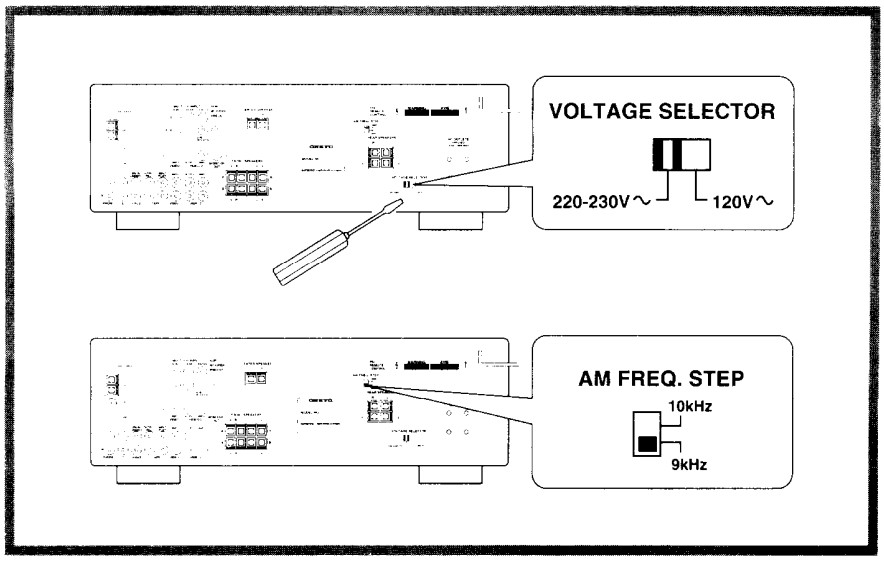
1 CV plug (Shape may vary according to the area where purchased.)

Memory Preservation

This unit does not require memory preservation batteries. A built-in memory power back-up system preserves the contents of the memory during power failures and even when the unit is unplugged. The unit must be plugged in order to charge the back-up system.

The memory preservation period after the unit has been unplugged varies depending on climate and placement of the unit. On the average, memory contents are protected over a period of a few weeks after the last time the unit has been unplugged. This period is shorter when the unit is exposed to a highly humid climate.

Setting the voltage selector and tuning step frequency (Worldwide models only)



Voltage selector

1. Determine the proper voltage for your area: 220-230V or 120V.
2. If the preset voltage is not correct for your area, insert a screwdriver into the groove in the switch. Slide the switch all the way to the right (120V) or to the left (220-230V), whichever is appropriate.

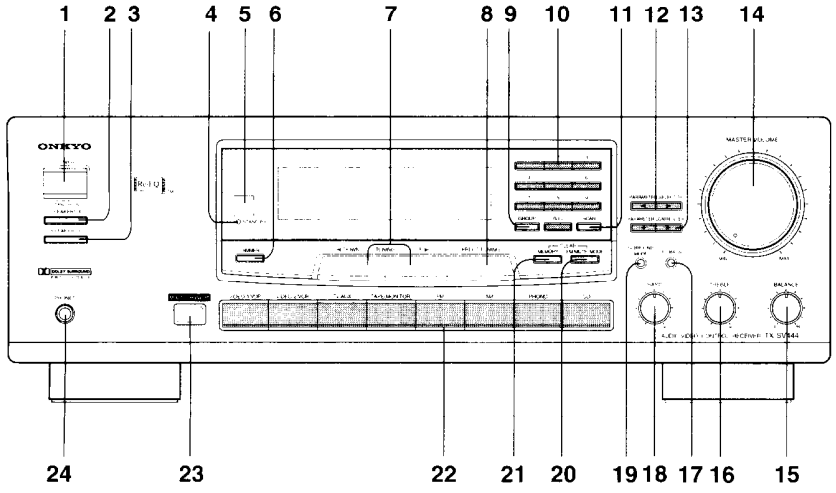
AM tuning step frequency

Worldwide models are equipped with a switch that controls the AM band tuning steps. Please set this switch to match the AM band tuning step frequency in your area.

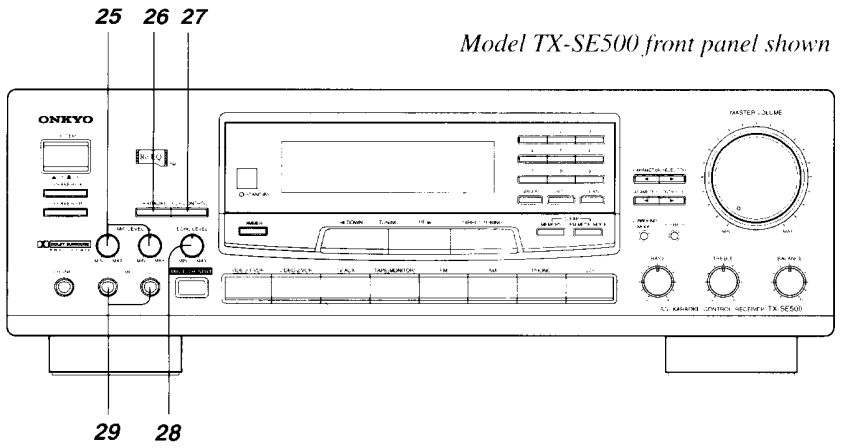
U.S.A. and Canada : 10kHz
Other areas : 9kHz

Control positions and names

Model TX-SV444 front panel shown



Model TX-SE500 front panel shown

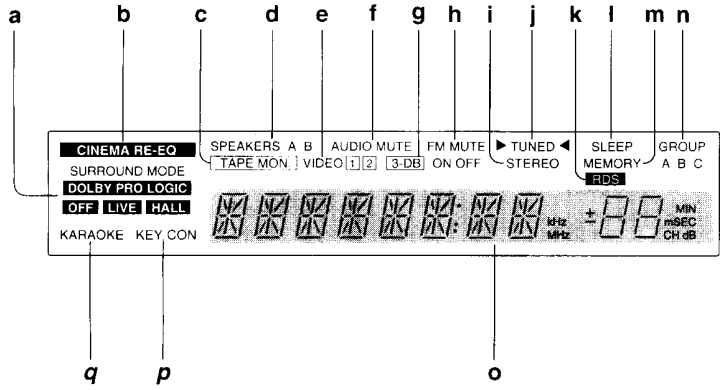


Front panel

For more information about buttons or knobs, refer to the pages listed in the brackets ([ ]) below.

1. **POWER (or SYSTEM) button [15, 16]**
2. **SPEAKERS A button [15, 16, 24]**
3. **SPEAKERS B button [16, 24]**
4. **STAND-BY indicator [6, 16]**
5. **Remote control sensor [6, 14]**
6. **DIMMER button [16]**
7. **TUNING UP/DOWN buttons [18]**
8. **DIRECT TUNING button [18]**
9. **GROUP button [19]**
10. **Number buttons [18, 19]**
11. **SCAN button [19]**
12. **PARAMETER SELECTOR buttons [20, 21, 22]**
13. **PARAMETER CONTROLLER buttons [20, 21, 22, 24]**
14. **MASTER VOLUME control knob [15, 21, 24]**
15. **BALANCE control knob [15, 16]**
16. **TREBLE control knob [15, 16]**
17. **3-D BASS button [15, 16]**
18. **BASS control knob [15, 16]**
19. **SURROUND MODE button [20, 21, 22, 24]**
20. **FM MUTE/MODE button [18, 19]**
21. **MEMORY button [19]**
22. **Input selector buttons [15, 18, 21, 24, 25, 26]**
23. **MULTI CHANNEL INPUT button [15, 22]**
24. **PHONES jack [17]**
25. ***MIC LEVEL control knobs [24]***
26. ***KARAOKE mode button [24]***
27. ***KEY CONTROL button [24]***
28. ***ECHO LEVEL control knob [24]***
29. ***MIC jacks [24]***

NOTE:
Italic numbers (25 through 29) are only for the model TX-SE500 features.

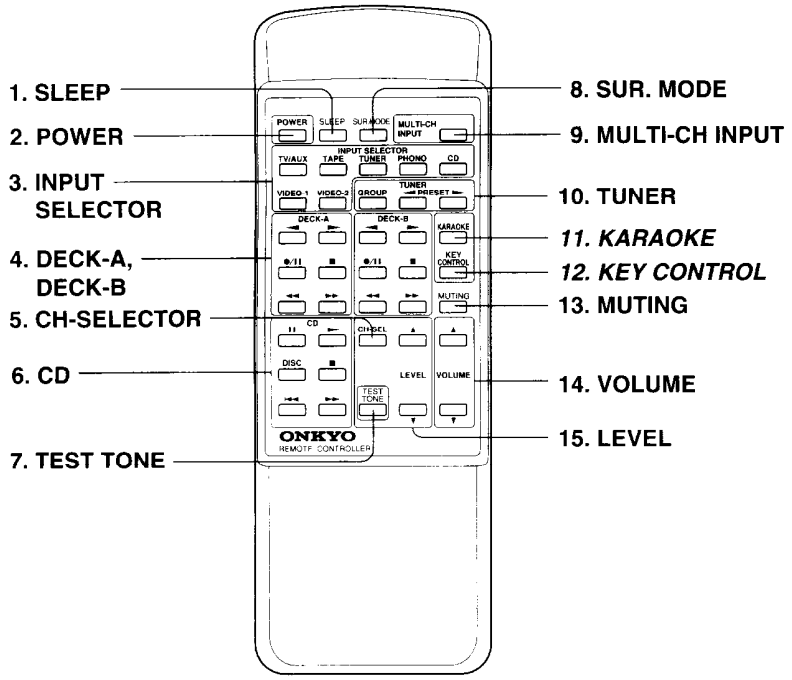


Display

If there is a protective film on the surface of the display, which is making it difficult to read the display, remove it.

a. **Surround Mode indicators**
b. **Cinema Re-Equalizer indicator**
c. **Tape Monitor indicator**
d. **Speakers A/B indicators**
e. **Video input selector indicators**
f. **Audio Mute indicator**
g. **3-D Bass indicator**
h. **FM Mute On/Off indicator**
i. **FM Stereo indicator**
j. **Tuned indicators**
k. **RDS station received indicator (European model only)**
l. **Sleep indicator**
m. **Memory indicator**
n. **Group indicators**
o. **Multi function display (Frequency/Input selector/Preset station/Sleep time/Center & rear volume level/Delay time)**
*p. **Key Control indicator (TX-SE500 only)***
*q. **Karaoke mode indicator (TX-SE500 only)***

Remote controller



(TX-SE500's remote controller shown)

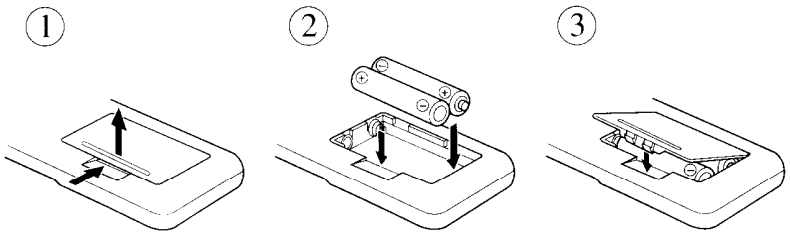
Remote controller

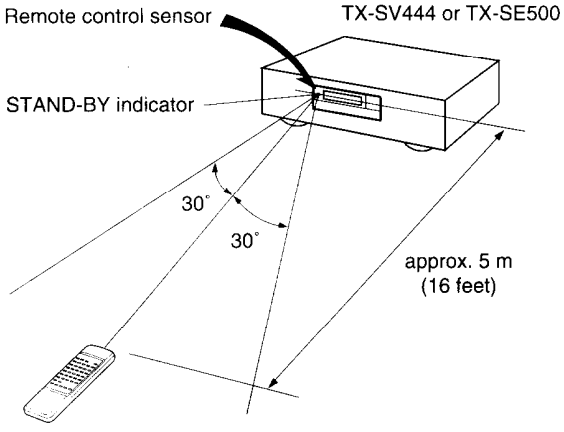
1. **Sleep button [17]**
2. **Power button [16]**
3. **Input Selector buttons [15, 21, 24]**
4. **Tape deck operation buttons [14]**
5. **Channel Selector button [21, 22]**
6. **CD player operation buttons [14]**
7. **Test Tone button [21]**
8. **Surround Mode button [21, 22, 24]**
9. **Multi Channel Input button [15, 22]**
10. **Tuner operation buttons [19]**
11. ***Karaoke mode button [24] (TX-SE500 only)***
12. ***Key Control button [24] (TX-SE500 only)***
13. **Muting button [17]**
14. **Volume up/down buttons [15, 21, 24]**
15. **Level up/down buttons [21, 22, 24]**

Italic numbers are only for the model TX-SE500 features.

Note for customers other than U.S.A. and Canada: the remote control cannot be used when the SYSTEM button on the front panel is set to the OFF.

Insert the batteries into the remote controller according to the illustration.





Regarding the batteries

Average battery life is about one year, depending upon the frequency of use and the environment (temperature and humidity) in which the remote control is used. Only use batteries of the kind specified in the table below.

Type	Voltage	Size
Manganese or Alkaline	1.5V	AA, R6 (UM-3) or LR6 (AM-3)

Warning

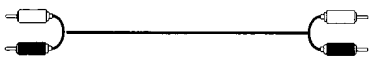
- Do not leave an expired battery in the case – it may leak or damage the remote controller.
- Do not use nickel cadmium (rechargeable) batteries.
- Replace both batteries at once; do not use one old battery and one new battery.

Using the remote controller

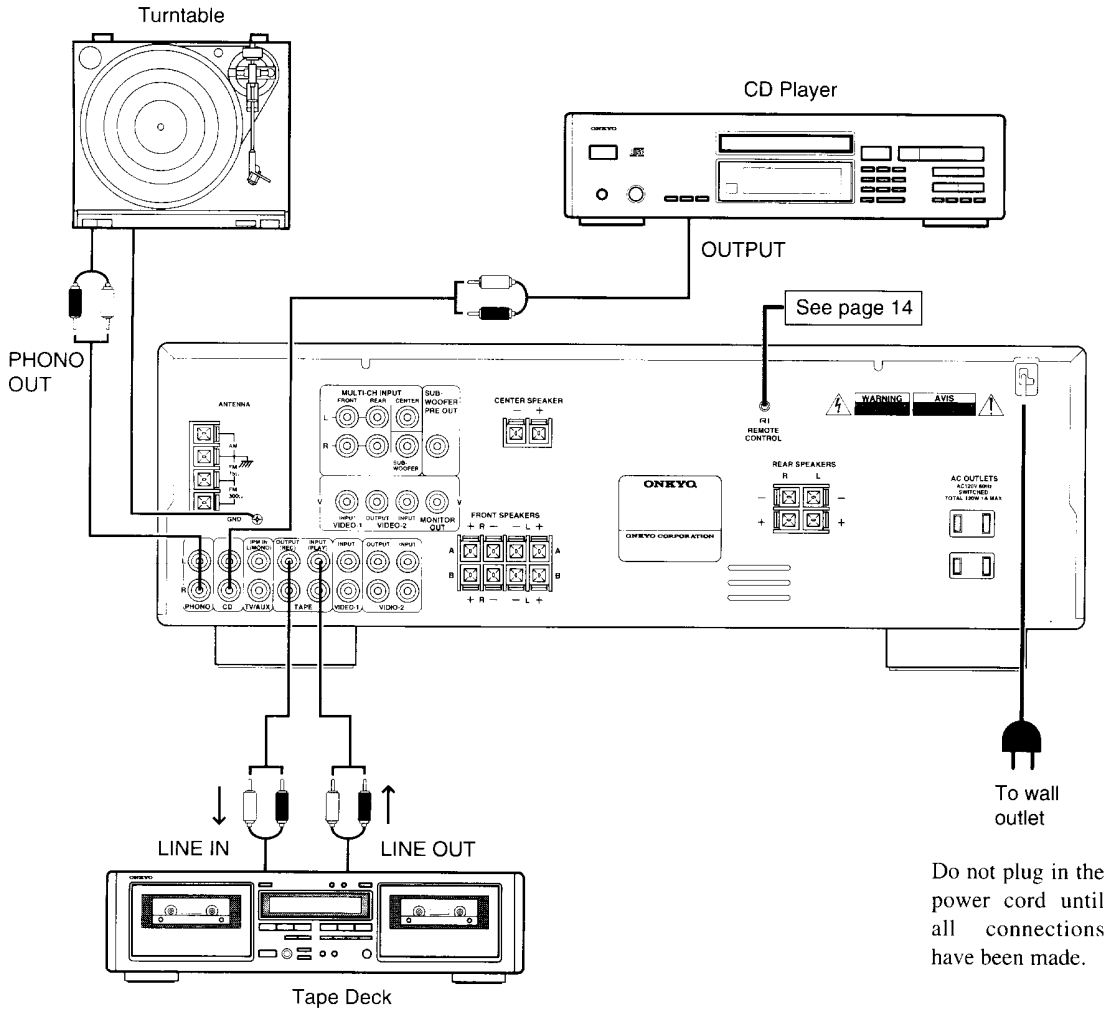
The STAND-BY indicator lights when a signal is received from the remote controller.
The following information will help you get optimal use from the remote controller.

- Place this receiver away from direct bright light, which can prevent proper operation of the remote controller.
- Make sure audio rack doors do not have tinted glass. If this receiver is placed behind such a door, this may prevent proper remote control operation.
- Using other remote controllers in the same room as this receiver's remote controller may cause interference.

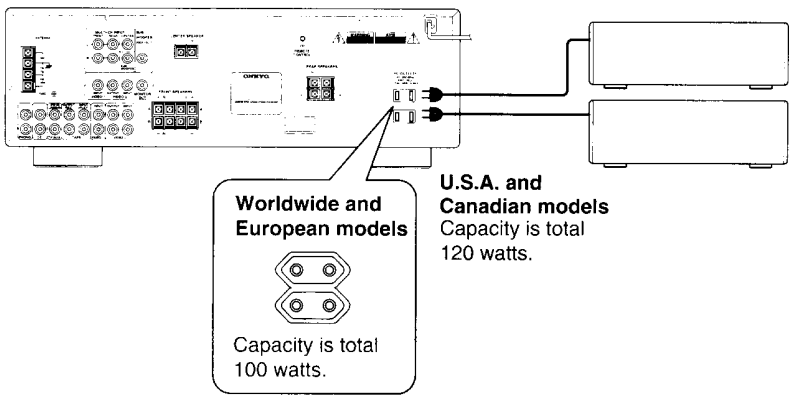
Audio equipment connections



- **On each pair of input jacks, the lower jack (marked R, red) corresponds to the right channel, and the upper jack (marked L, white) to the left channel.**
- **Please refer to the instruction manual of each component when making any connections.**
- **This receiver is designed for use with turntables using moving magnet cartridges.**



Do not plug in the power cord until all connections have been made.



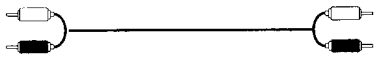
AC Outlets Connections

The SWITCHED outlets are switched on and off by the POWER (or SYSTEM) button on the front panel or remote controller.

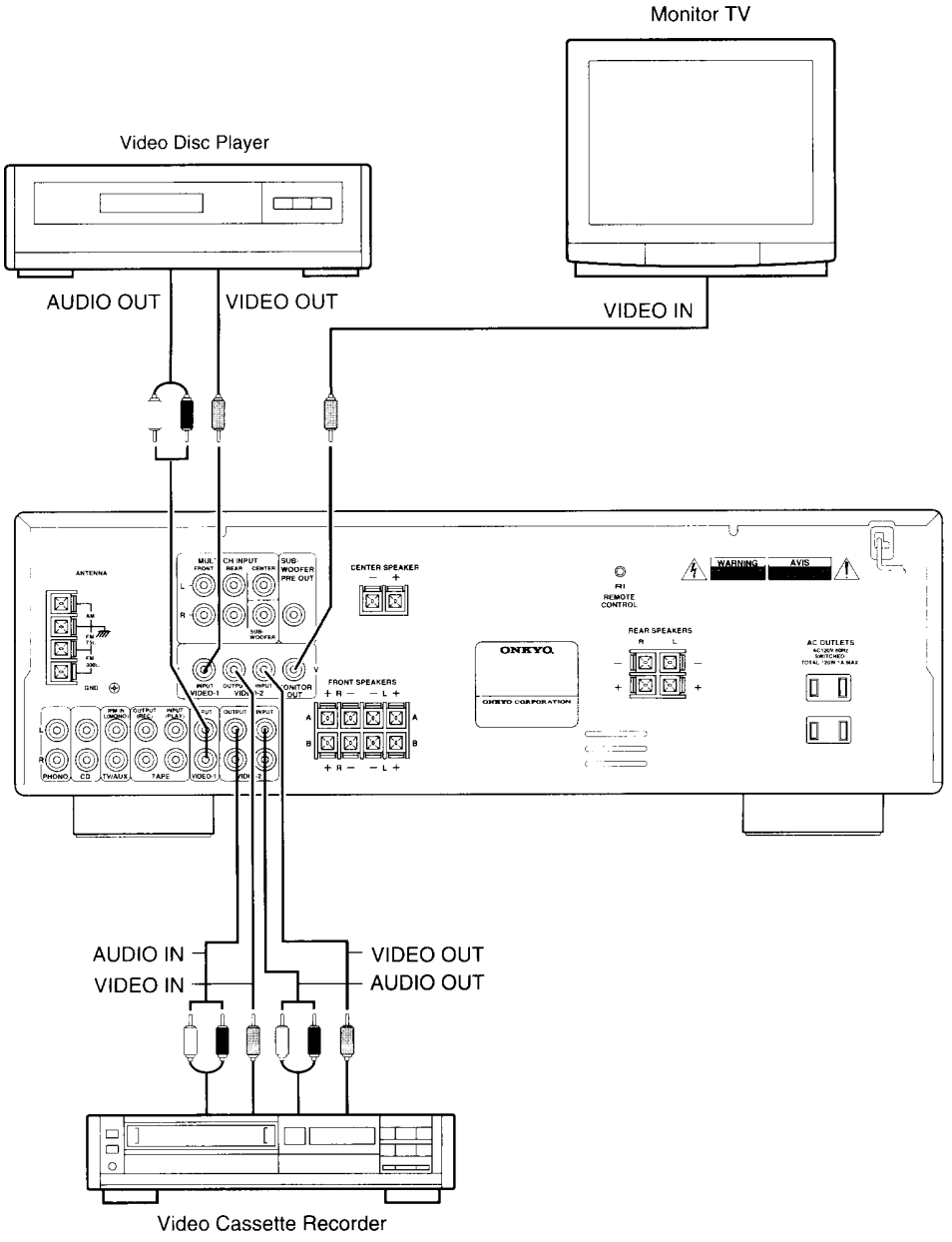
(Note for customers other than U.S.A. and Canada: the remote controller cannot be used when the SYSTEM button on the front panel is set to the OFF.)

The shape, number and total capacity of the AC outlets may differ according to the area where the unit is purchased. Be careful that other components connected to this receiver do not exceed the capacity that is printed on the rear panel above the AC outlets.

Video equipment connections



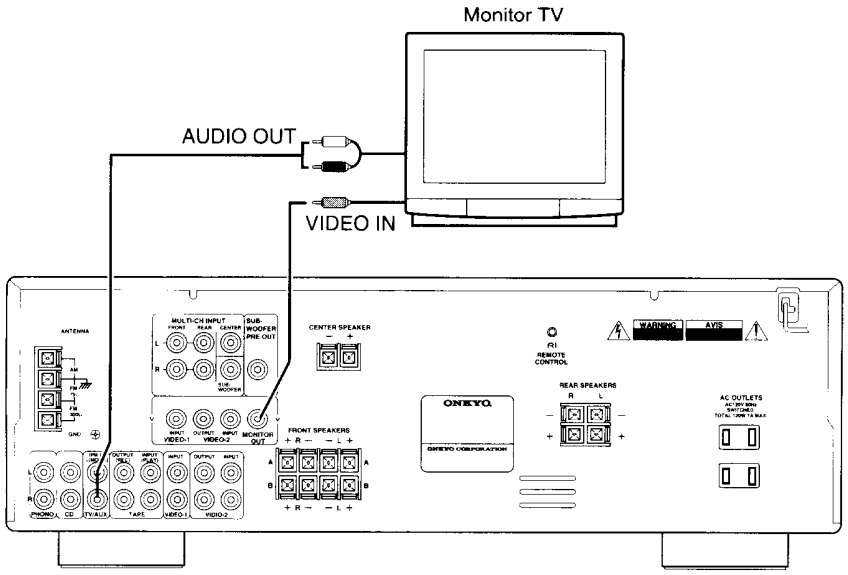
- **On each pair of input jacks, the lower jack (marked R, red) corresponds to the right channel, and the upper jack (marked L, white) to the left channel.**
- **Please refer to the instruction manual of each component when making any connections.**



- When using a playback-only VCR, you only need to make the output connections.
- This receiver can be used with only a monitor TV equipped with a video input jack.
- Interference may be caused between the TV and this receiver. If this interference occurs place the receiver and the TV as far apart as possible. We do not recommend the use of a common TV/FM antenna (see antenna section).

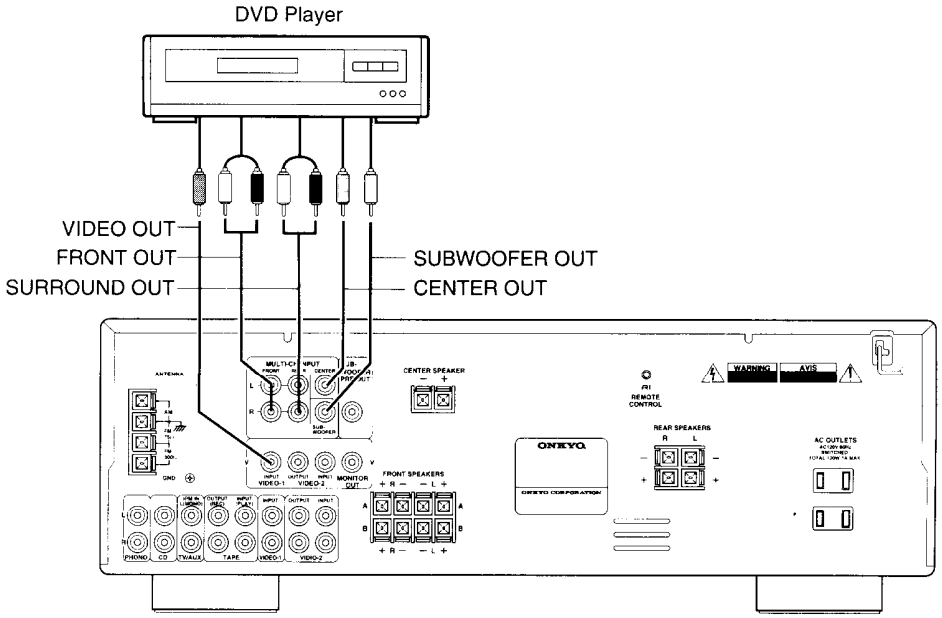
IPM (Intelligent Power Management) System

To use the IPM function, you must connect the audio output of a monitor TV to the TV/AUX jacks and press the TV/AUX button on the input selector. "TV" or "AUX" will be shown on the display. Then, press the TV/AUX button until "IPM ON" appears on the display. If "IPM OFF" is shown on the display, the IPM function cannot be used in this situation.
When the TV is switched on, this receiver also switches on automatically and the input selector is set to TV. Provided that the input selector remains set to TV, the receiver will automatically switch off five minutes after the TV is switched off.



- This receiver will automatically switch on approximately three to five seconds after the TV comes on.
- If a mono TV is used, connect the audio output of the TV to the TV/AUX "L" jack.

DVD 5.1 CH PLAYER



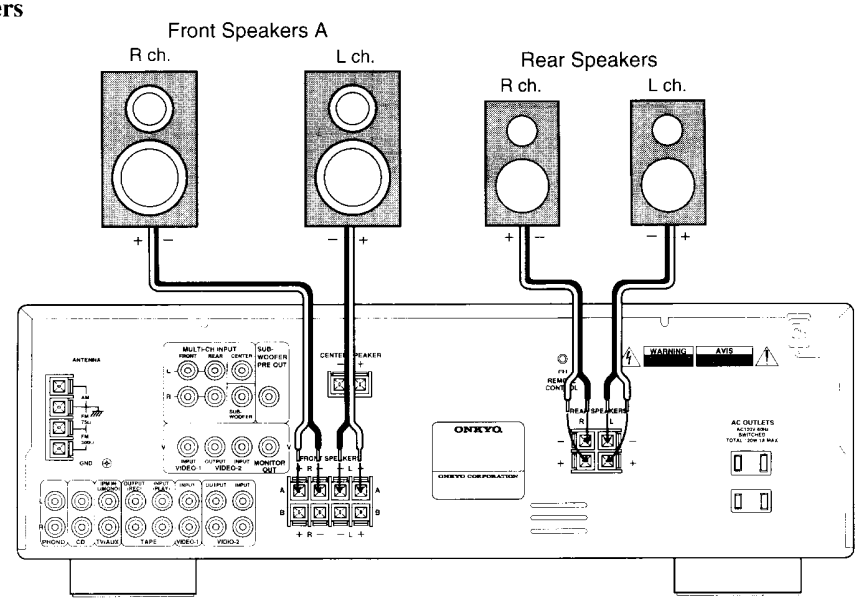
- When using a DVD player connected to the MULTI-CH INPUT jacks, set the SPEAKERS A button on the front panel to ON and set the SPEAKERS B button to OFF.

Making speakers connections

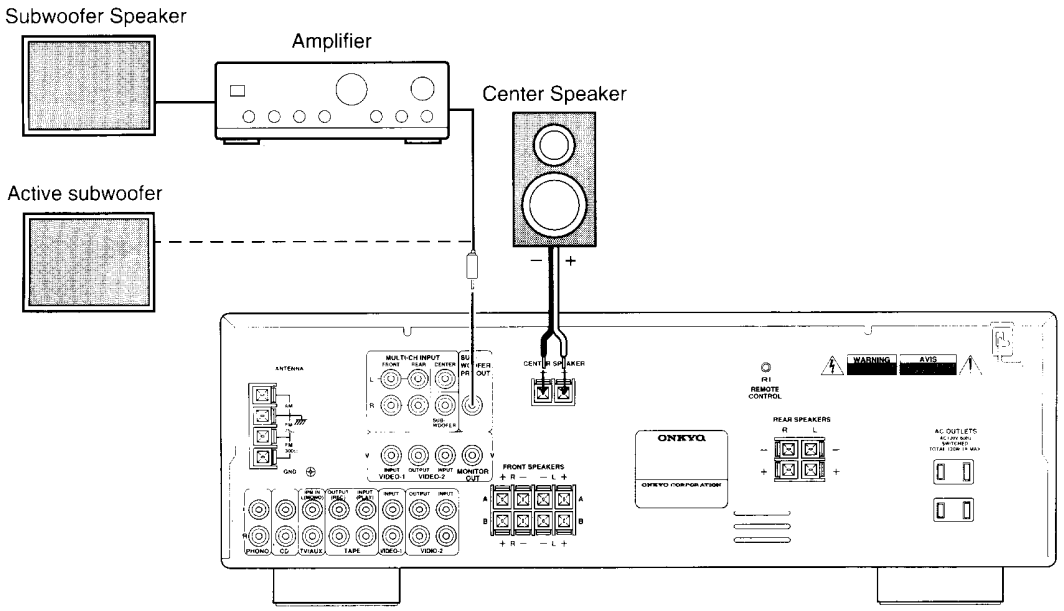
- If you want to use the surround effects, the rear speakers must be connected. For best results, connect a center speaker.
- Use FRONT SPEAKERS B terminals to connect a second pair of front speakers.
- This receiver is designed to produce optimum sound quality when speakers with impedances within the set ranges are connected. Please check the following information and choose speakers with the necessary impedances for the connections.

FRONT SPEAKERS	A or B : 6 ohms min./speaker
	A + B : 12 ohms min./speaker
REAR SPEAKERS	6 ohms min./speaker
CENTER SPEAKER	6 ohms min.

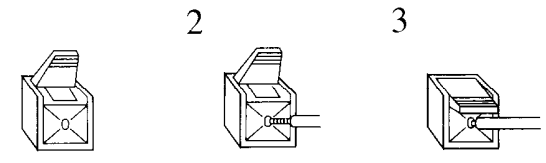
Front and rear speakers



Center speaker and Subwoofer

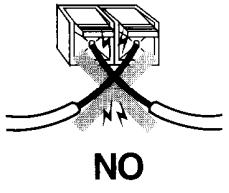


Connecting the speaker cables

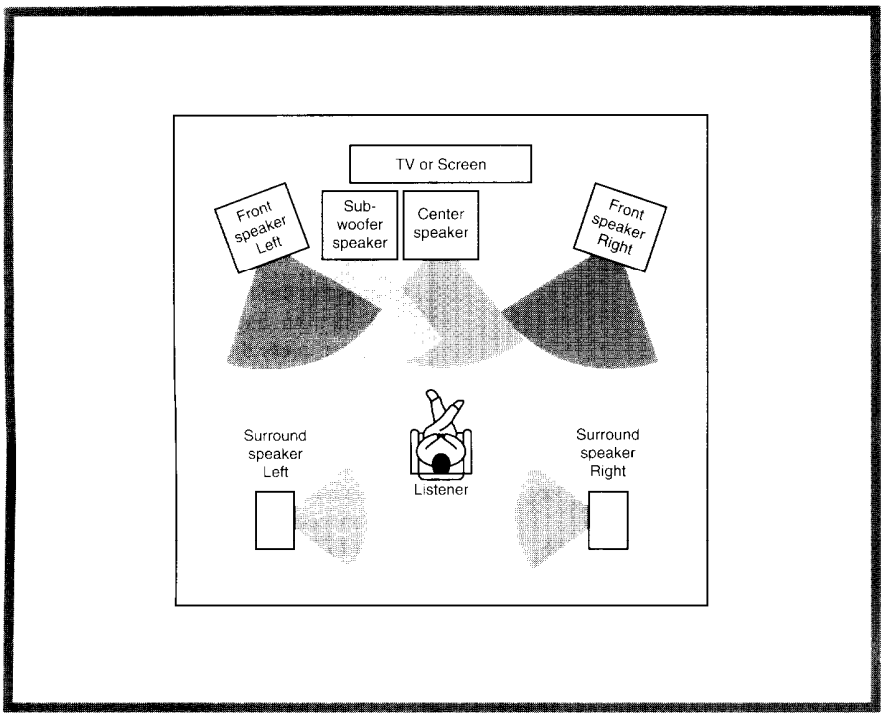


NOTE:

To prevent damage to circuitry, never short-circuit the positive (+) and negative (–) speaker wire.



Speaker placement

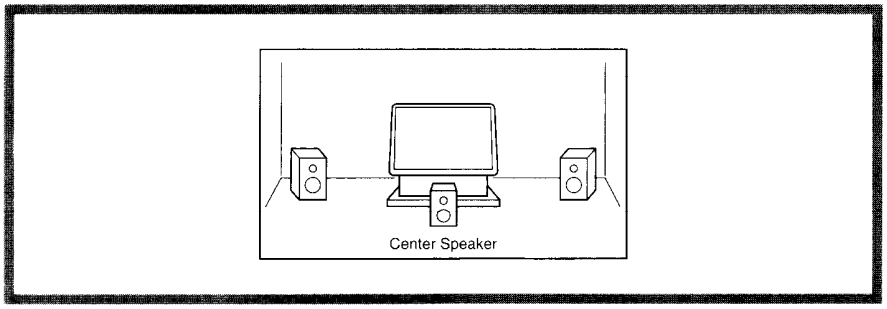


Placing the speakers for Surround effects

Speaker placement plays an important role in the reproduction of sound using Surround. The manner in which the speakers are placed varies depending on the size of the room and the wall coverings used in the room. The following shows an example of a layout for standard speaker placement. Refer to the example for placing the speakers appropriately in order to experience the best Surround sound.
In principle, for Surround sound reproduction, two Front speakers and two Surround (Rear) speakers are required. Refer to the illustration on the left.

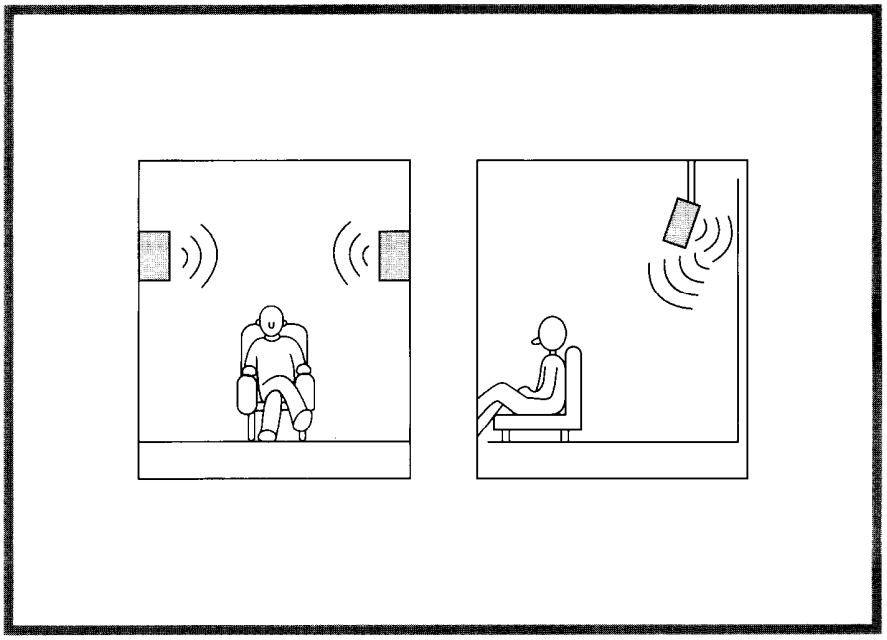
Placing the front speakers

If the Front left and right speakers are placed too far away from each other, sound spreads out too much and is dispersed resulting in diminished sound quality.



Placing the center speaker

To enjoy Surround sound, a Center speaker is required in addition to the four basic speakers.
If a screen with a projector is used, place the Center speaker under the screen. If a Monitor TV is used, it is recommended that the Center speaker be placed on top of or under the Monitor.



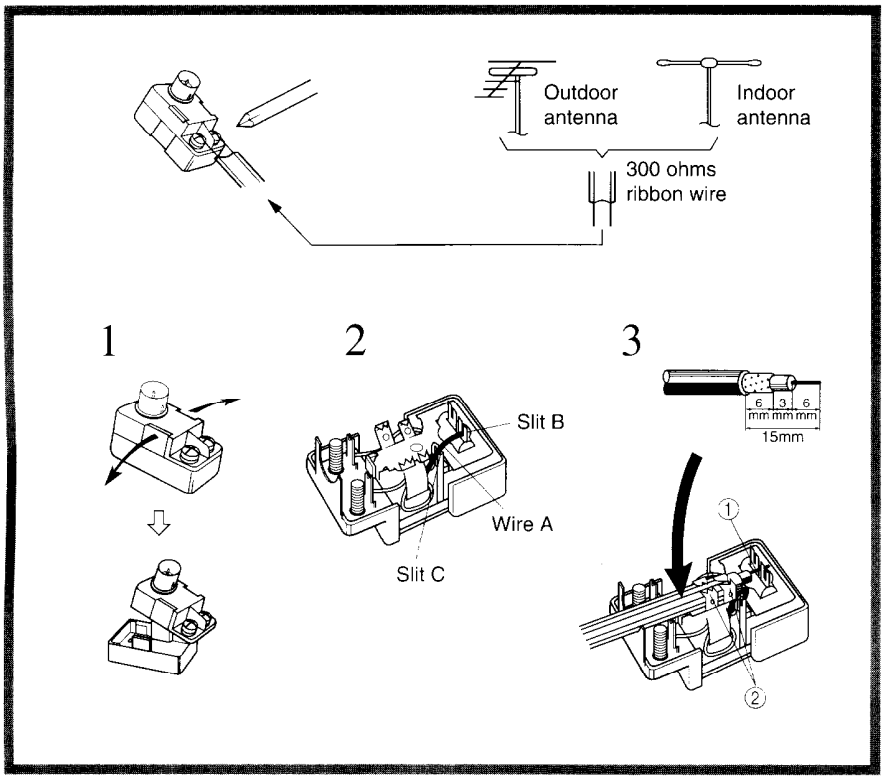
Placing the rear speakers

To bring out the feeling of shifting sound, the rear speakers should not be placed on the floor, but would be most effective placed above ear position. They can also be placed facing the ceiling or walls to reflect the sound.

Placing a subwoofer speaker

To enjoy powerful bass sounds, install a subwoofer with a built-in power amplifier. The placement of the Subwoofer does not affect the final quality of the sound image too much, therefore as its exact placement is not critical, you can install it more with the room layout in mind. To especially enjoy A/V Surround, a Subwoofer can bring out the best features of Dolby Pro Logic Surround.

Making antenna connections



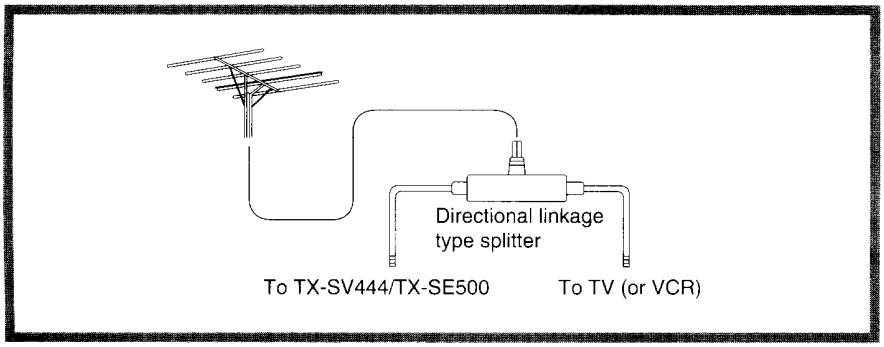
Connecting the antenna cable to the 75/300 ohm antenna adaptor (Worldwide models)

Connecting the 300 ohm ribbon wire:
Loosen the screws and wrap the wire around these screws. Then tighten the screws with a screwdriver.

Connecting the coaxial cable:

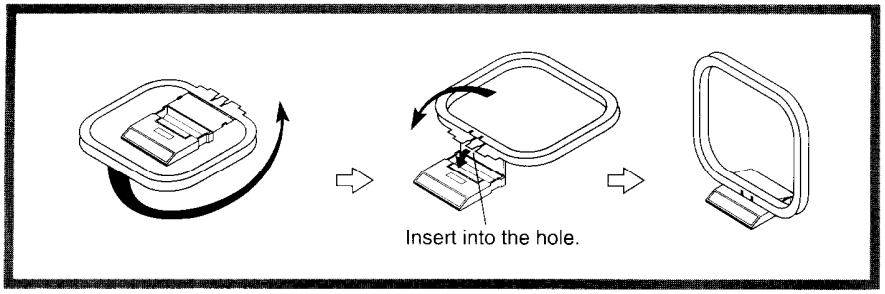
1. With your fingernail or a small screwdriver, press the stoppers outwards and remove the cover.
2. Remove the transformer wire A from slit B and insert it into slit C.
3. Prepare the coaxial cable as shown in the diagram.
   Connect the 75/300 ohm antenna adaptor to the coaxial cable.
   ① Insert the end of the cable.
   ② Clamp it in place with pliers.

- This adaptor is included if your receiver is a worldwide model.



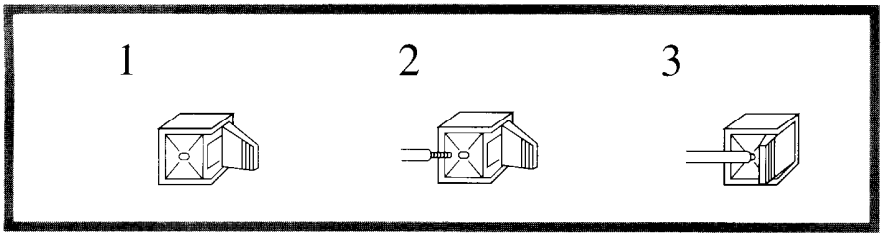
Directional linkage

Do not use the same antenna for both FM and TV (or VCR) reception since the FM and TV (or VCR) signals can interfere with each other. If you must use a common FM/TV (or VCR) antenna, use a directional linkage type splitter.



Assembling the AM loop antenna

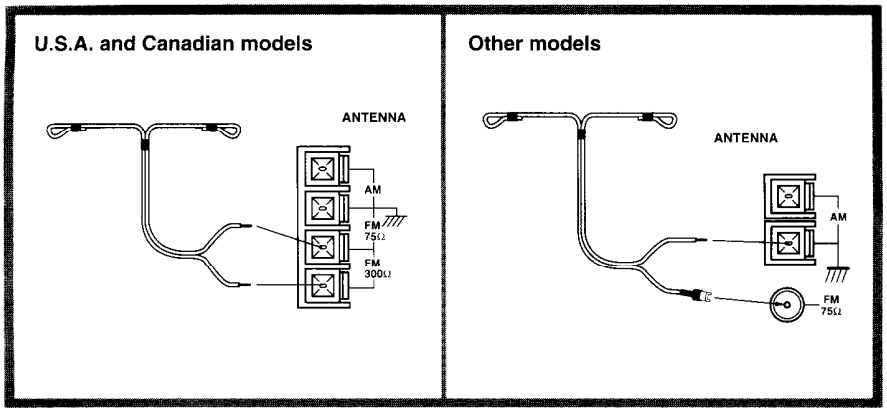
Assemble the loop antenna as shown in the illustration.



Connecting the antenna cable

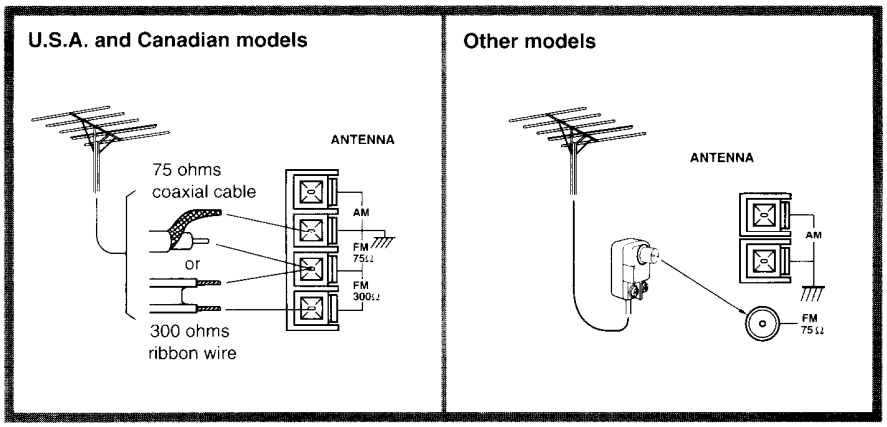
1. Open the lever.
2. Insert the wire.
3. Close the lever.

Making antenna connections



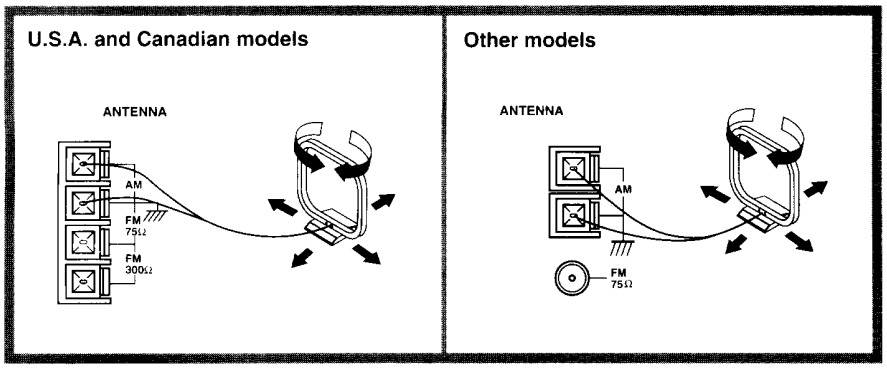
Connecting the T-shaped FM antenna

The T-shaped FM antenna is for indoor use only. Extend the antenna and move it in various directions until the clearest signal is received. Fix it with push pins or similar in the position giving the least amount of distortion.



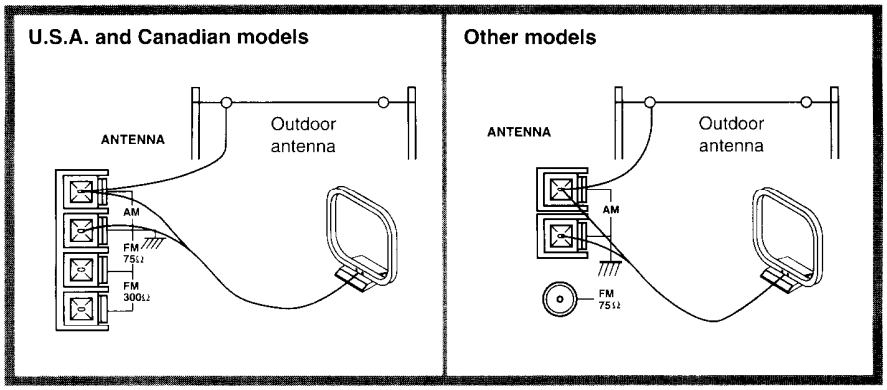
Connecting an FM outdoor antenna

If the reception is not very clear with the attached T-shaped FM antenna, the use of an external antenna is recommended.
Please make sure that you comply with the following considerations regarding the location.
Keep the antenna away from noise sources (neon signs, busy roads etc.).
It is dangerous to put it close to power lines, so keep it well away from power lines, etc.



Connecting the AM loop antenna

The AM loop antenna is for indoor use only. Set it in the direction and position where you receive the clearest sound. Put it as far as possible away from the main unit, TV set, speaker cords and power cord.

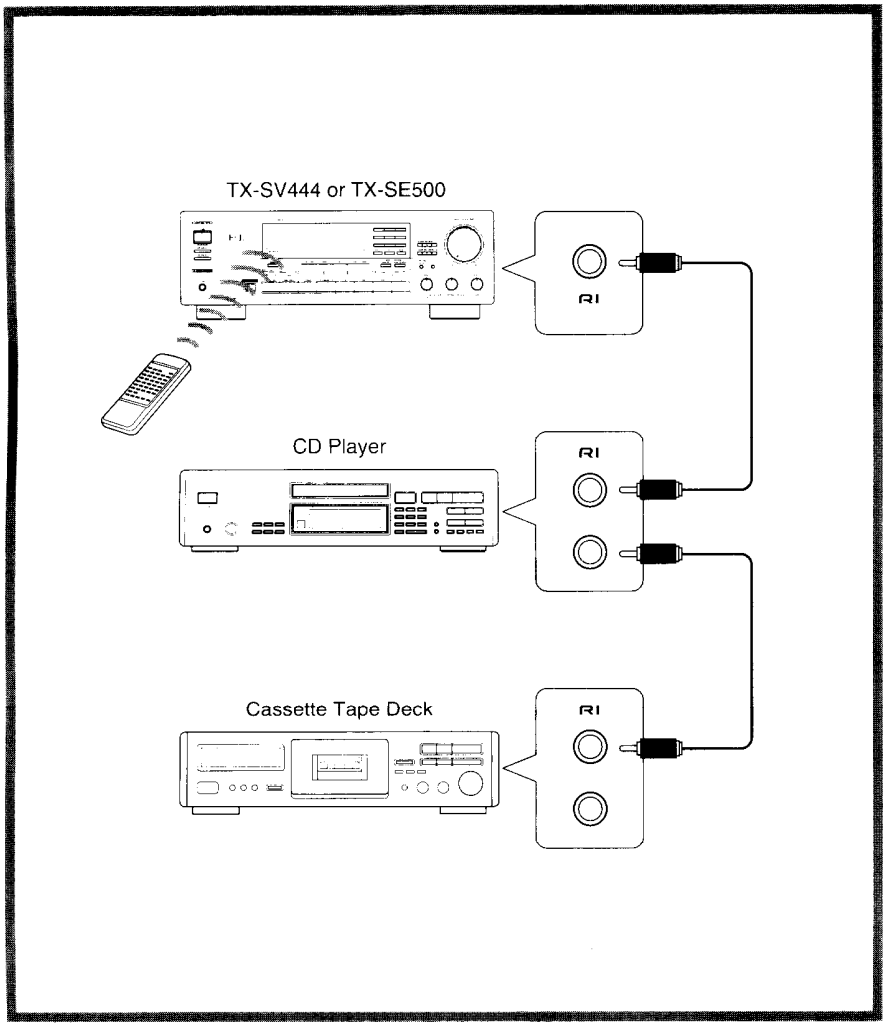


Connecting an AM outdoor antenna

When reception is not satisfactory using the attached AM loop antenna alone, connection of an external antenna is recommended.
(Do not remove the AM loop antenna.)
The external antenna will be more effective if you stretch it horizontally in a high place above a window or outside.

Connecting Onkyo components for RI operation

When Onkyo products with the RI (Remote Interactive) mark are connected to this receiver, you are able to operate each component with the remote controller of the receiver. This means you can control your whole system with just one remote controller.
(The RI mark is an Onkyo mark.)



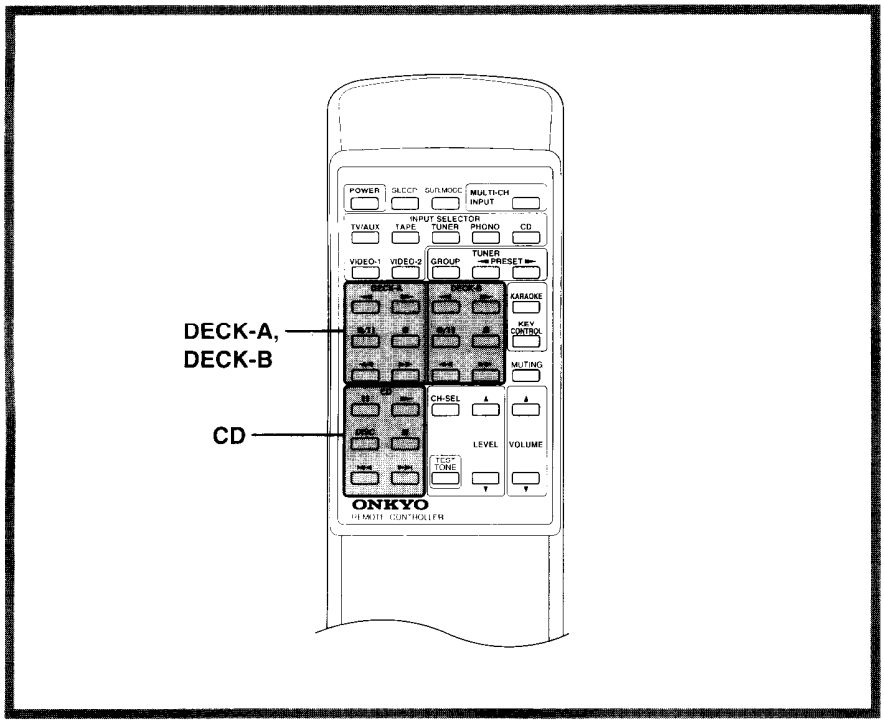
Connections for remote control (RI)

When connecting Onkyo products, you will be able to use the remote controller of this receiver to control the entire system.

1. To use the receiver with an Onkyo compact disc player and cassette tape deck bearing the RI mark, connect the components together using RI remote control cable, plugged into the REMOTE CONTROL jacks.
2. As the exact connection sequence of the RI cable is unimportant, you can connect from this unit to either the compact disc player or the cassette tape deck.
3. To operate correctly, the remote controller must face towards the remote control sensor of this receiver.

NOTES:

- An RI remote control cable equipped with a 3.5mm (1/8 in.) diameter miniature two-conductor phone plug is included with every compact disc player or cassette tape deck with the RI mark.
- A cassette tape deck and compact disc player that have the Onkyo RI mark can be operated, using the accessory remote controller.
- Remote control operation is not possible when only the remote control cable is connected – the audio connection cables must also be connected.



When you have made the connections mentioned above, you will be able to use the following buttons.

Tape deck operation buttons (DECK-A, DECK-B)

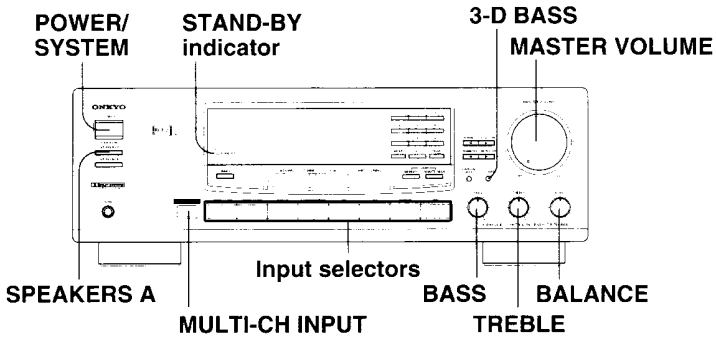
- ◄ : Reverse playback button
- ► : Forward playback button
- ● II : Rec/pause button
- ■ : Stop button
- ◄◄ : Fast rewind button
- ►► : Fast forward button

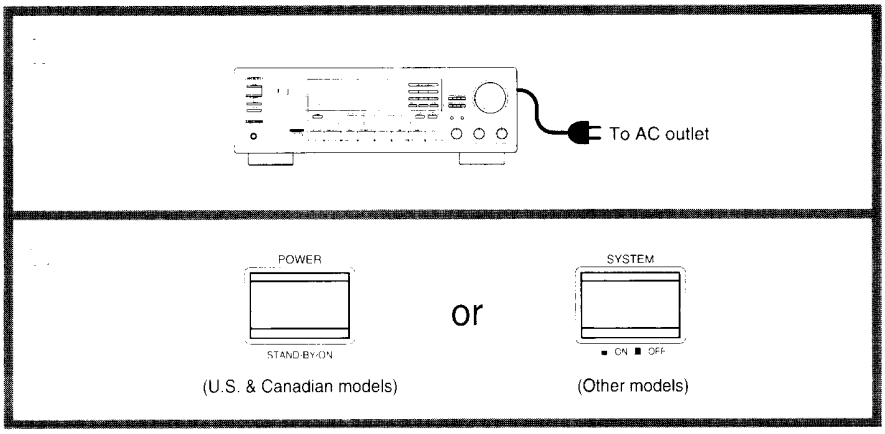
- When only a single deck is used, operate DECK-B.

CD player operation buttons (CD)

- DISC : Disc button for CD changer
- ► : Playback button
- II : Pause button
- ■ : Stop button
- |◄◄ : Reverse skip button
- ►►| : Forward skip button

Basic operations



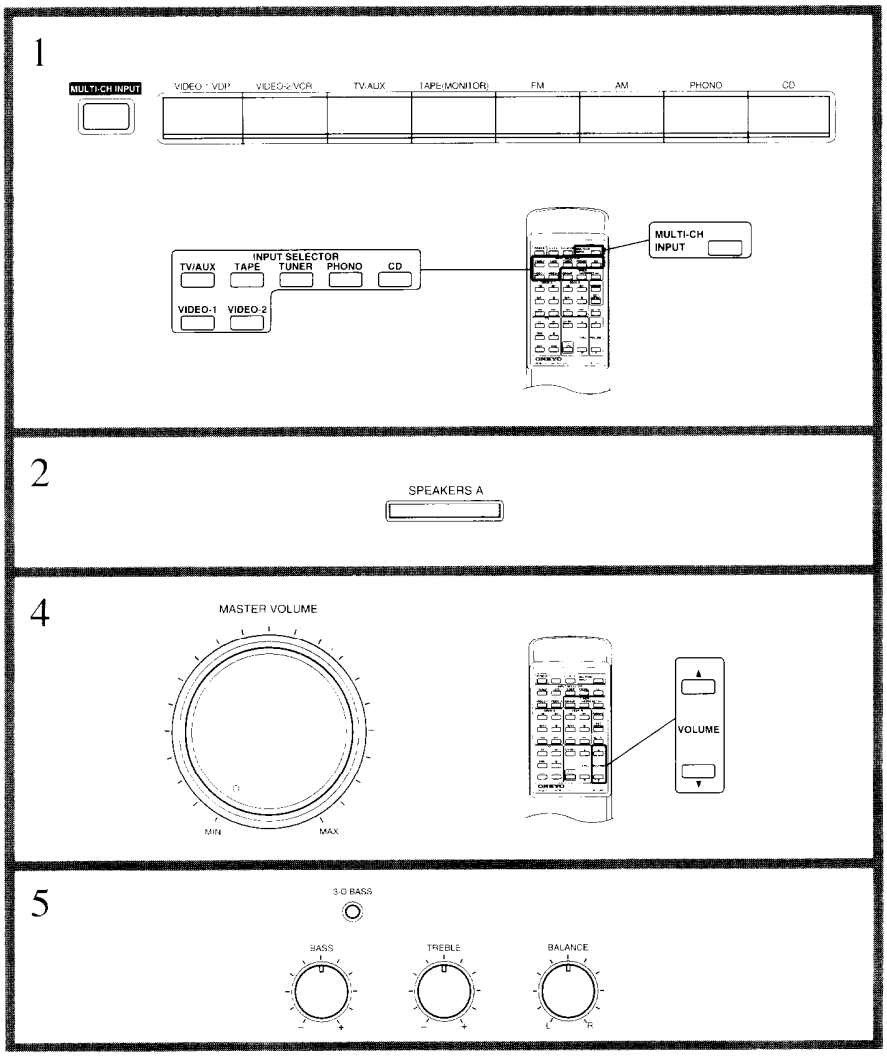


Connecting the power

Before plugging in the receiver, confirm that all connections have been made properly.

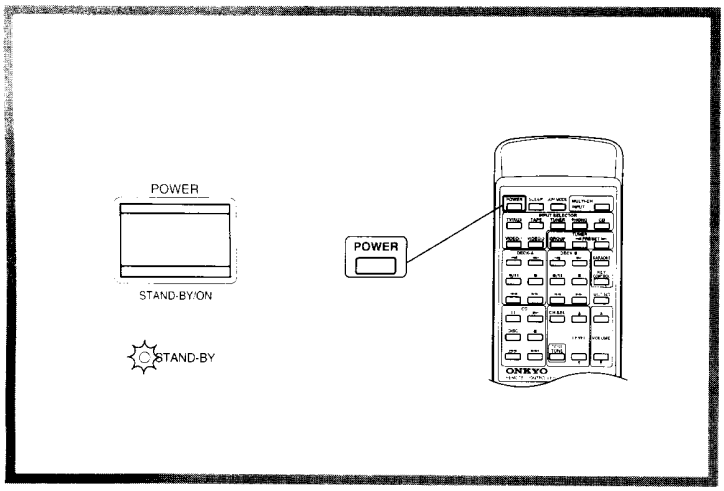
1. **Insert the AC power supply cord into the wall outlet.**
2. **Press the POWER (or SYSTEM) button.**
   Please refer to the "Power button and Stand-by indicator" explanation on the page 16.

- Turning on this receiver's power may cause a momentary power surge, which might interfere with other electrical equipment, such as computers. If so, use a wall outlet on a different circuit.



Listening to your favorite source

1. **Press the desired input selector button or MULTI-CH INPUT button (e.g. PHONO).**
   The appropriate letters (e.g. PHONO) appear on the display.
   Confirm that the TAPE MON. indicator is not lit on the display. If the indicator is lit, press the TAPE (MONITOR) button to turn off the TAPE MON. indicator and press the desired input selector button.
   Also verify that the audio muting is off.
2. **Press the SPEAKERS A button.**
   SPEAKERS A indicator lights up.
   (Refer to the "Speakers selector" on the page 16 for details.)
3. **Start the selected input source playing.**
   Follow the operating instructions of that unit.
4. **Set the volume to appropriate level using the MASTER VOLUME control or VOLUME ▲(up)/▼(down) buttons on the remote controller.**
   These controls set the volume of the Front, Center, and Rear (Surround) speakers.
5. **Adjust the tone controls.**

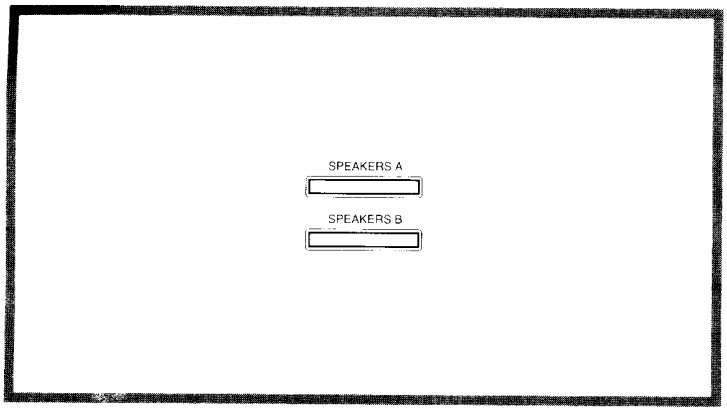


Power button and Stand-by indicator

If your receiver is a U.S.A. or Canadian model:
The STAND-BY indicator lights up when the power cord connected to the receiver is plugged into an AC wall outlet. This indicates that the unit is in Standby mode, ready for operation.
To turn on the receiver fully, press the POWER button. The display will light up and the STAND-BY indicator will go off.

If your receiver is not a U.S.A. or Canadian model:
Press the SYSTEM button to turn on the receiver. The display will light up. Press the POWER button on the remote controller to put the receiver in Standby mode. The STAND-BY indicator will light up.

The STAND-BY indicator also flashes when a signal is received from the remote controller.

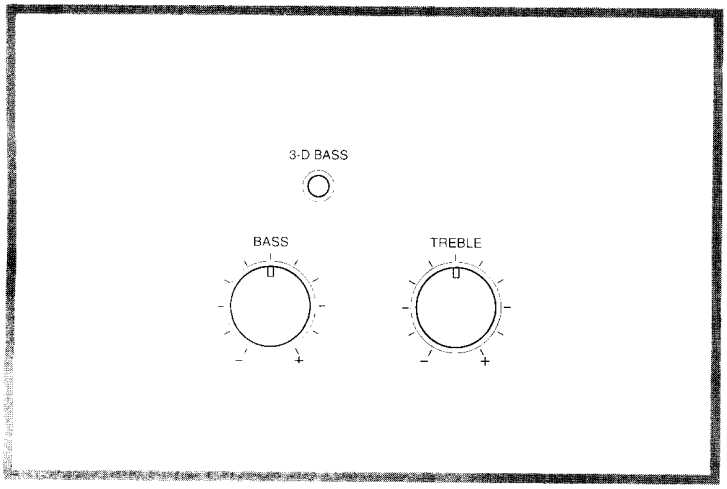


Speakers selector

SPEAKERS A: This button turns on or off the speakers connected to the FRONT A, CENTER and REAR SPEAKERS terminals.
When the speakers are turned on, the SPEAKERS A indicator lights up.

SPEAKERS B: This button turns on or off the speakers connected to the FRONT SPEAKERS B terminals.
When the speakers are turned on, the SPEAKERS B indicator lights up.

When you select Dolby Pro Logic, Hall, Live, or Multi-CH Surround, be sure to turn on SPEAKERS A and turn off SPEAKERS B.



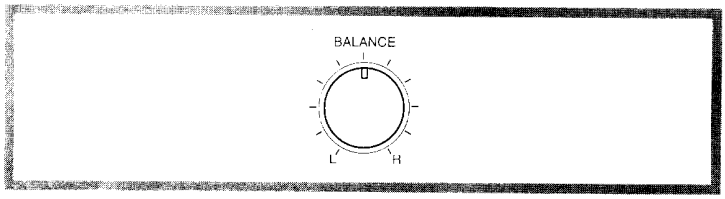
Adjusting the tone

Treble and Bass are effective only for the Front speakers or headphones.
The best results are obtained from DOLBY PRO LOGIC Surround when the Center and Front speakers contain the same amounts of mid and high frequencies. As the Treble and Bass control do not affect the Center speaker, adjust the tone controls for the Front left and right speakers to match the sound given by the Center speaker. Because of this, we recommend the use of a good quality Center speaker.

BASS: Adjust to strengthen or weaken bass response.

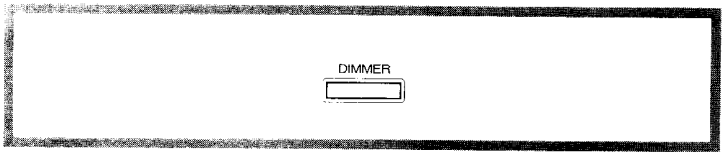
TREBLE: Adjust to strengthen or weaken treble response.

3-D BASS: This button is used to clearly reproduce ultra low frequency, and only affects the Front and Center speakers. When this button is pressed, the 3-DB indicator lights up.



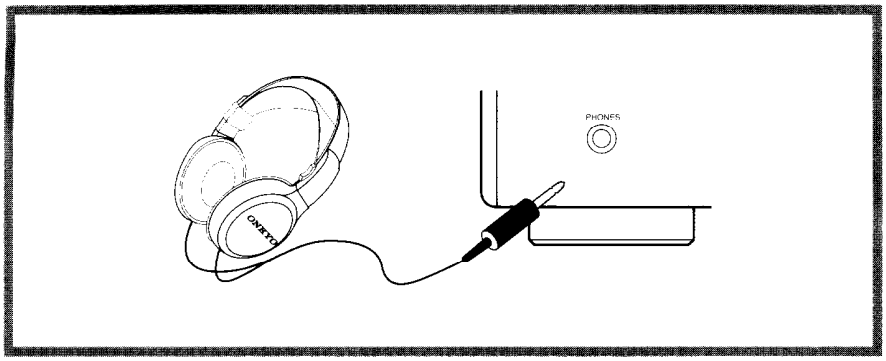
Adjusting the balance

The BALANCE control is used to control the relative volume levels of the Front speakers or headphones.



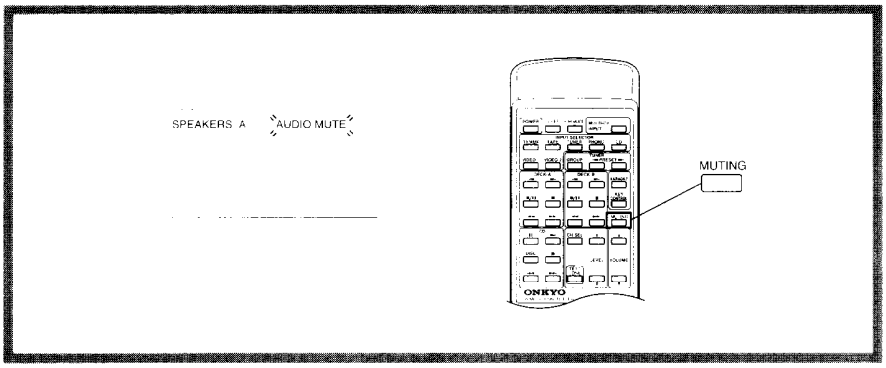
Dimmer button

This button can be used to change the brightness of the display. The brightness changes to bright or dim.



Listening with the headphones

Stereo headphones with a standard stereo jack plug can be connected to the PHONES jack. The sound heard through the headphones is the same sound that can be heard from the Front speakers, although it may be slightly different from what is heard from the speakers when the Surround mode is used. (The sound from the headphones may sound a little distant.)

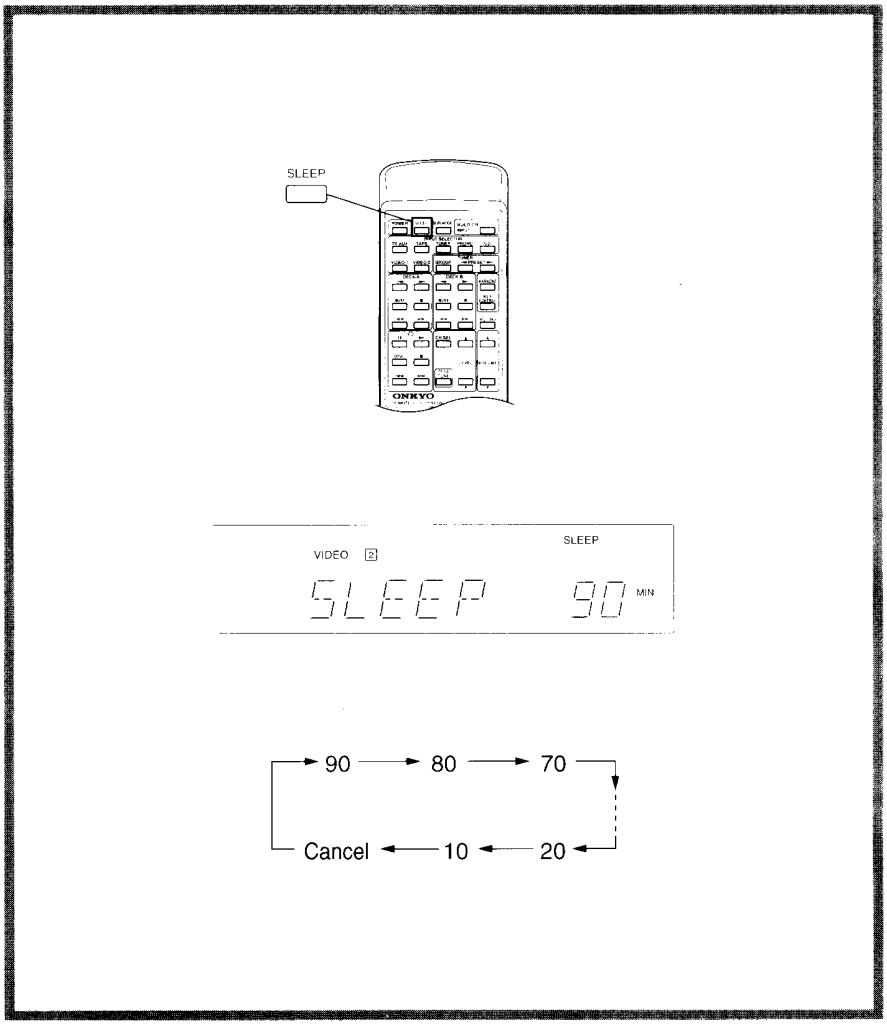


Temporary muting

Press the MUTING button on the remote controller. The AUDIO MUTE indicator will blink and the sound from the speakers or headphones will be switched off by the receiver's audio muting circuits.

To cancel,

- press the MUTING button again, *or*
- turn the power off, then on.



Sleep facility

The sleep timer can power off the system after a specified time period.
To operate this function, use the remote controller supplied with this receiver.

1. **Start the source playing that you would like to listen to (CD, tape or radio broadcast).**
2. **Set the amount of time after which you want the system to turn off.**

The sleep timer works for up to 90 minutes. You can shorten the timer by 10 minutes increments by pressing the SLEEP button until the desired time has been reached.
When the set time comes, the power will be switched off automatically.

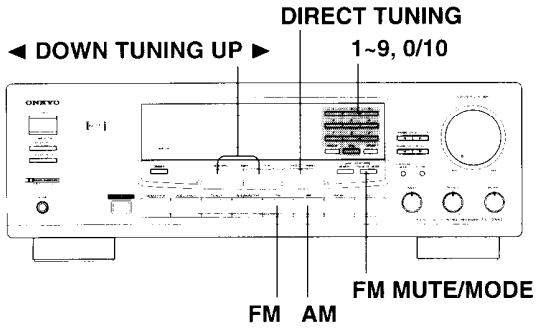
Cancelling the sleep setting

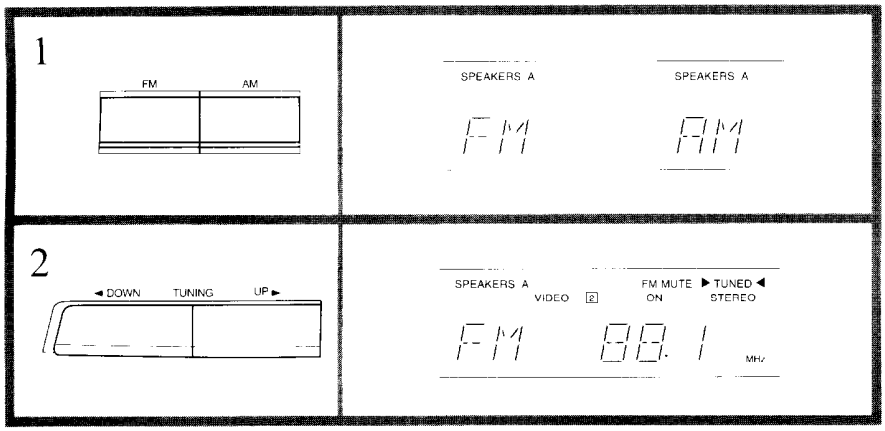
Press the SLEEP button until it changes to the source display you are listening to.
or
The timer can also be cancelled while it is in operation, by turning off the power.

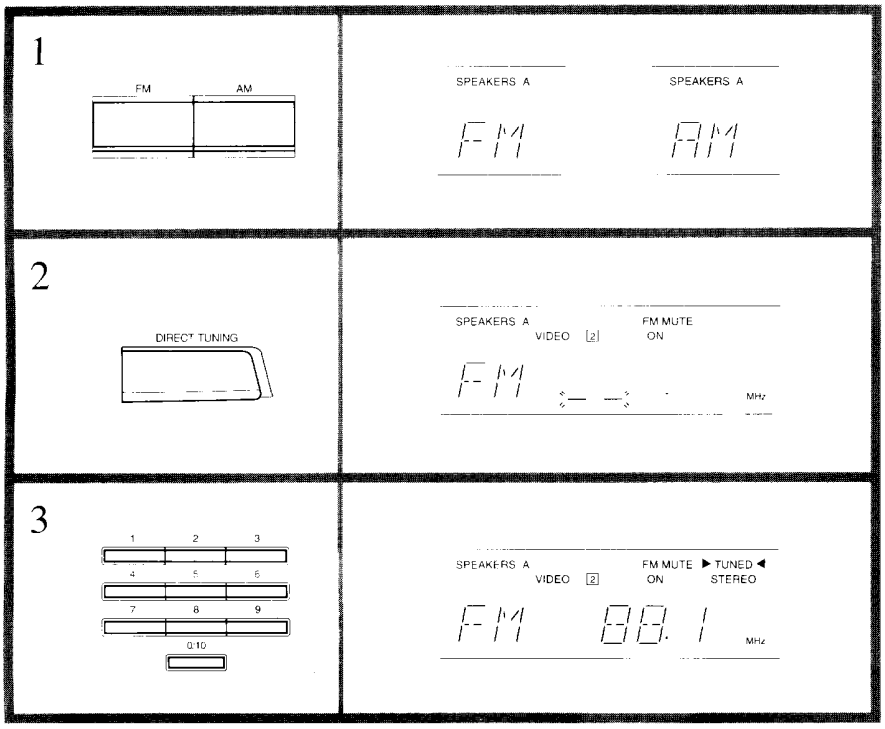
The direct function

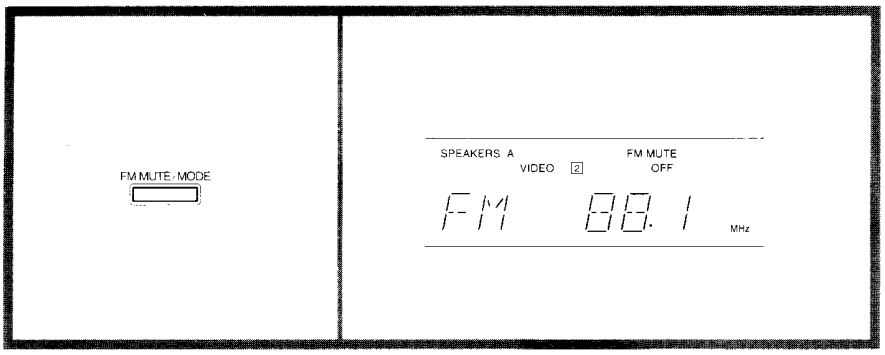
If the compact disc player or tape deck connected to this receiver feature the **RI** mark, you can use the direct function to automatically set the input selector. Simply operating the compact disc player, for example, will automatically set the receiver's input selector to CD. This means you don't have to set this unit's input selector when changing the music source.

Receiving stations









Manual tuning

1. **Press the FM or AM button.**
2. **Use the TUNING UP/DOWN buttons to change the frequency.**
   UP ..... the frequency increases.
   DOWN ... the frequency decreases.

- The frequency is changed in 100kHz (or 50kHz) steps in FM and 10kHz (or 9kHz) in AM when the TUNING UP/DOWN button is pressed in single steps.
- In FM, if this button is held continuously for more than 0.5 seconds, the frequencies are scanned automatically (FM auto tuning mode). When a broadcast is received, scanning stops.

Direct tuning

1. **Press the FM or AM button.**
2. **Press the DIRECT TUNING button.**
   The "_ _" will flash 16 seconds in the frequency display.
3. **Enter the frequency using the number buttons while the cursor is flashing.**
   Example: 88.10MHz
   50kHz step area, 8 → 8 → 1 → 0/10
   100kHz step area, 8 → 8 → 1
   Use the 0/10 number button to enter a 0.

- Out-of-range frequencies will be ignored.
- When receiving AM broadcasts with a 10kHz steps, entering a number for the 10kHz digit will set the 1kHz digit to 0.

Receiving RDS (TX-SV444 European model only)

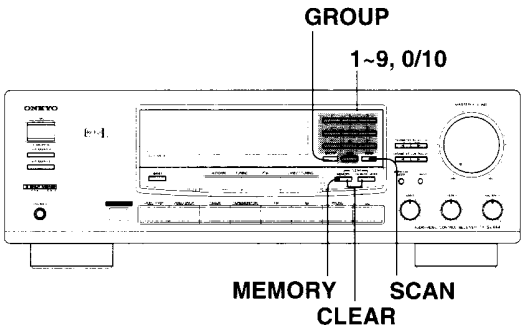
When an RDS (Radio Data System) station broadcasting PS (Program Service Name) information is received, the RDS indicator lights up and name of the station is displayed.

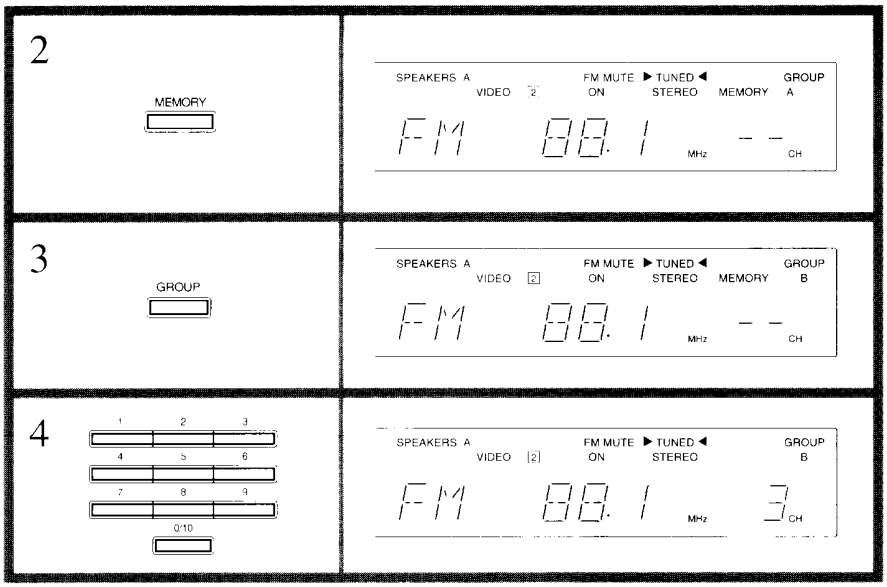
- RDS reception is only available on the TX-SV444 European model, and only in areas where RDS broadcasts are available.

Listening to a stereo radio stations (FM mode)

If you tune in a stereo FM station, the STEREO indicator will be illuminated if the signal is sufficiently strong.
If the signal is weak, it may be impossible to tune in to your desired station. In this case, tune in as follows.
Press the FM MUTE/MODE button and FM MUTE OFF indicator lights. At this time, the station will be in mono and interstation noise will be heard. Select a station you want listen to.

Using preset stations

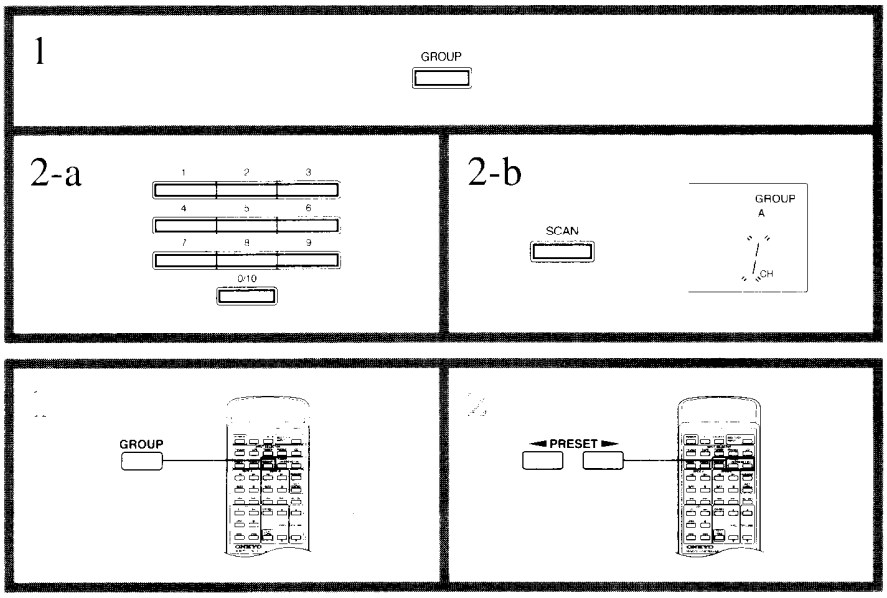




Programming radio stations

1. **Select the frequency that you want to store in the memory.**
   (See Receiving stations on page 18.)
2. **Press the MEMORY button.**
   The MEMORY indicator will light for 8 seconds.
3. **While the MEMORY indicator lights, press the GROUP button to choose the desired group.**
   The group shown on the display changes in the following order each time the button is pressed: A → B → C → A.
4. **Select the desired memory number using the number buttons.**
   Use the 0/10 number button to enter a 10.

- Since ten AM or FM stations can be stored in each group (A, B or C), a total of 30 stations can be stored in the memory.



Recalling preset stations

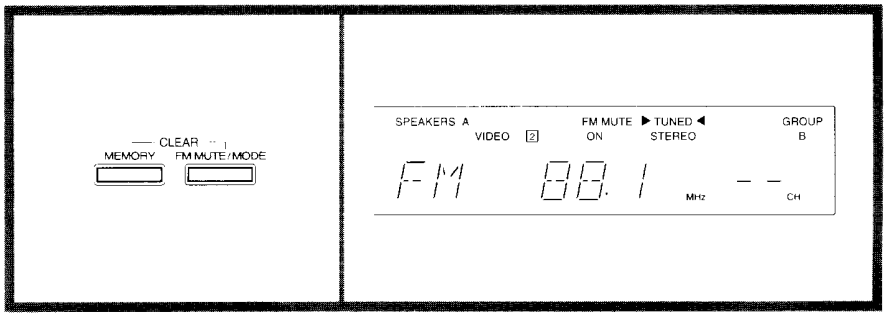
1. **Press the GROUP button to select the desired group.**

2-a. **Input the memory number you wish to receive by using the number buttons.**

2-b. **Press the SCAN button.**
   Each station stored in the group chosen in step 1 will be received for 5 seconds (for each station).
   When the station that you want is found, press the SCAN button again and scanning will stop.

Use Remote controller

1. **Press the GROUP button and choose the group.**
2. **Press the PRESET (◄ or ►) button.**



Cancelling preset stations

1. **Select the station as explained in the previous section.**
2. **Press the FM MUTE/MODE button while holding down the MEMORY button. "– –" will be shown on the channel display.**

- Once the preset station has been cancelled, the memory location can be used to store another station.

Use of surround mode

This receiver is provided with 3 kinds of Surround modes. Select a mode by pressing the SURROUND MODE button. When using the remote controller, press the SUR. MODE button. Make your choice of modes depending on the type of music you are listening to, the media used, and your personal preference. The selected surround mode is automatically stored along with the selected source. When the same source is subsequently selected, the stored surround mode will be automatically recalled.

Surround Modes

DOLBY PRO LOGIC
By using video tape and laser discs with the Dolby Surround trade mark. You can decode four channel surround sound.

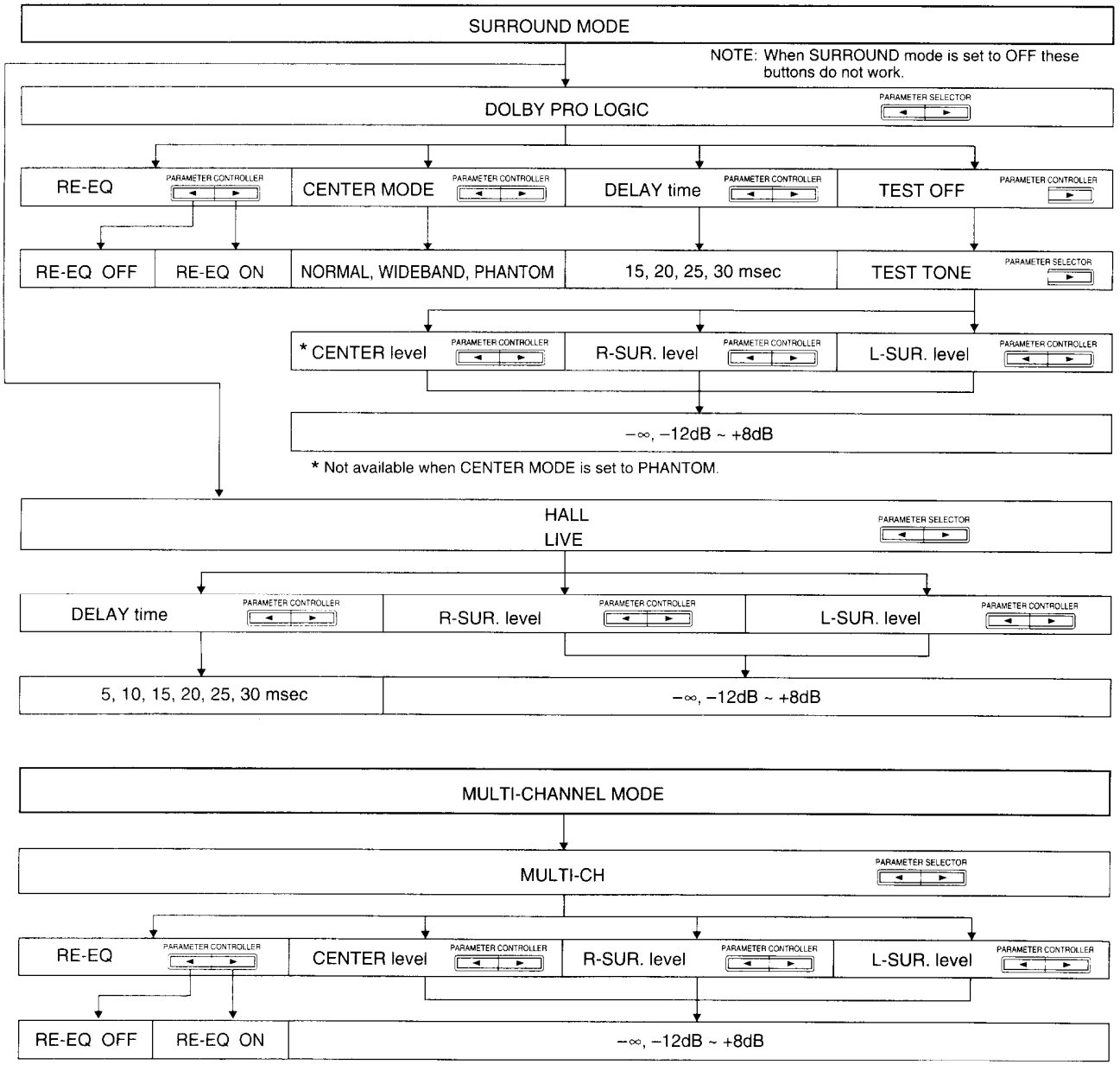
HALL
Simulates the atmosphere of a concert hall. Intended for classical music.

OFF
This is the mode used when you do not wish to use the surround mode. All input sound is output from the front speakers directly.

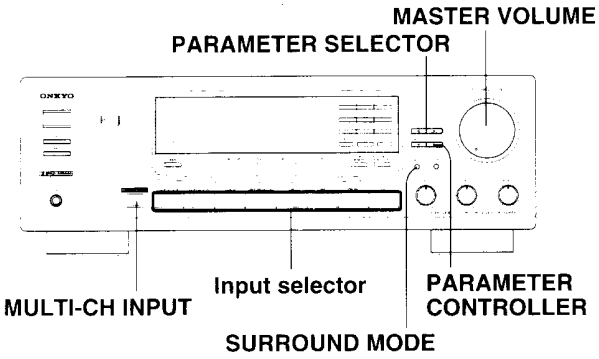
LIVE
Reproduces the feeling of a live performance.

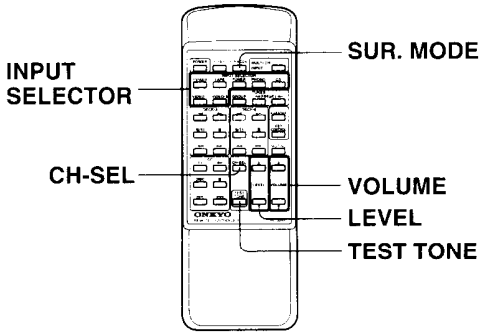
Parameter selector

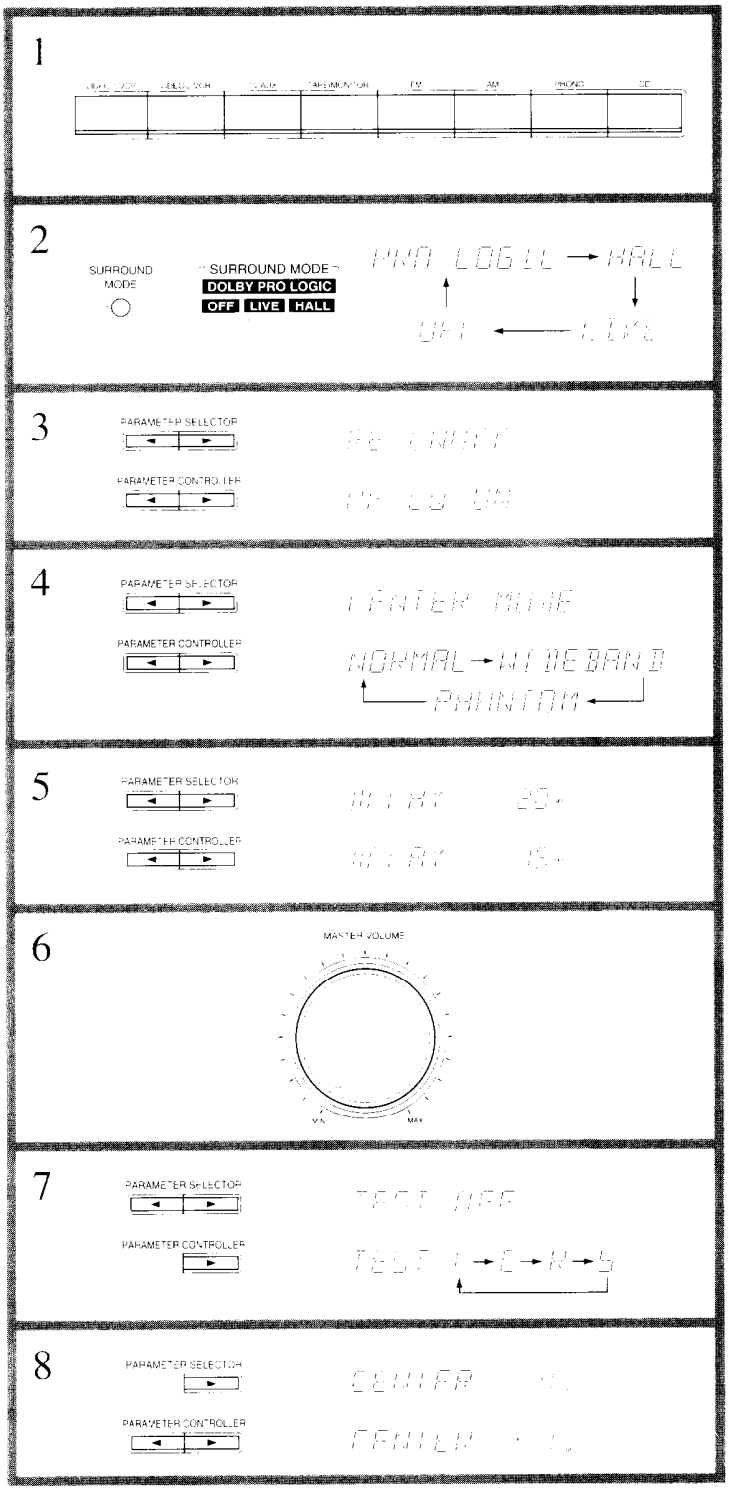
This chart shows how the display changes when the PARAMETER SELECTOR buttons are pressed. Pressing the PARAMETER CONTROLLER button in each display can change the value and condition of whichever parameter is displayed.



Setting the surround parameters







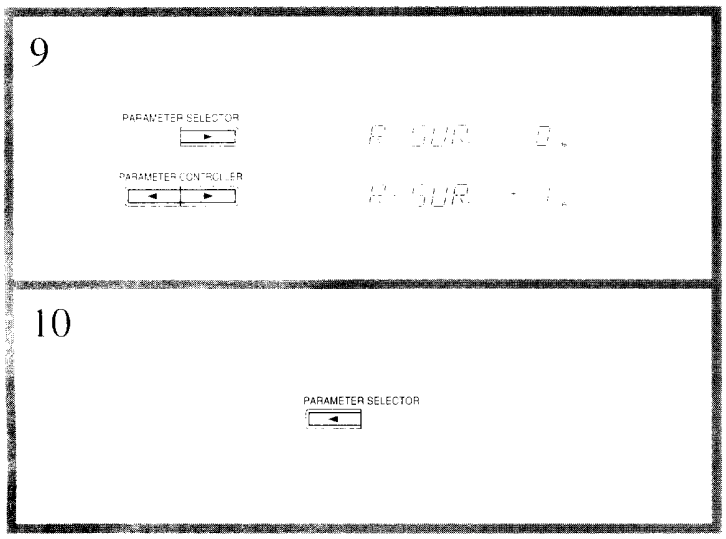
Setting the Dolby Pro Logic surround parameters

When using video cassette tapes or video discs with the Dolby Surround trademark, you can achieve the same kind of sound in your room that can be experienced in a movie theater.

1. **Select a source encoded with Dolby surround.**
2. **Press the SURROUND MODE button to set Dolby PRO LOGIC surround mode.**
   Each time the SURROUND MODE button is pressed the mode changes as pictured and is shown in the display.
3. **Use the PARAMETER SELECTOR ◄ or ► button to select CINEMA RE-EQ mode. Then, use the PARAMETER CONTROLLER ◄ or ► button to select either OFF or ON.**
   Refer to the "Cinema RE-Equalizer" on page 22 for details.
4. **Use the PARAMETER SELECTOR ◄ or ► button to select CENTER MODE. Then, use the PARAMETER CONTROLLER ◄ or ► button to select either NORMAL, WIDEBAND, or PHANTOM.**
   Refer to the "Center mode" on page 23 for details.
5. **Use the PARAMETER SELECTOR ◄ or ► button to select DELAY time mode. And, use the PARAMETER CONTROLLER ◄ or ► button to adjust the delay time.**
   Refer to "Delay time" on page 23 for details.
6. **Set the MASTER VOLUME to the desired listening position.**
   Using remote controller, use the VOLUME ▲ (up) or ▼ (down) button to set the volume level.
7. **Use the PARAMETER SELECTOR ◄ or ► button to select TEST OFF mode. And, press the PARAMETER CONTROLLER ► button.**
   The test tone (pink noise) will start.
   Using the remote controller, press the TEST TONE button.
   Refer to "Test tone" on page 23 for details.
8. **Adjust the center level.**
   Press the PARAMETER SELECTOR ► button to select CENTER level mode. And, use the PARAMETER CONTROLLER ◄ or ► button to adjust the center level.
   Using the remote controller, press the CH-SEL button to select CENTER level mode and use LEVEL ▲ (up) or ▼ (down) button to adjust the level.

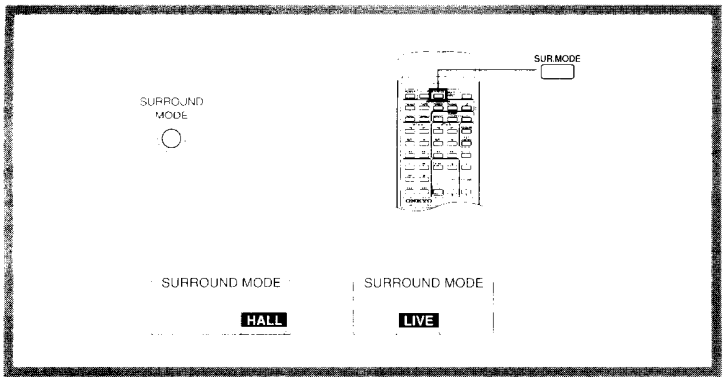
- When the center mode is set to PHANTOM, you cannot adjust the center level in this way.

(continued on page 22)



9. **Adjust the rear level.**
   Press the PARAMETER SELECTOR ► button to select R-SUR. (or L-SUR.) level mode. And, use the PARAMETER CONTROLLER ◄ or ► button to adjust the rear levels.
   Using the remote controller, press the CH-SEL button to select R-SUR. (or L-SUR.) level mode and use the LEVEL ▲ (up) or ▼ (down) button to adjust the level.
10. **Press the PARAMETER SELECTOR ◄ button and stop the test tone.**
    Using the remote controller, press the TEST TONE button again.

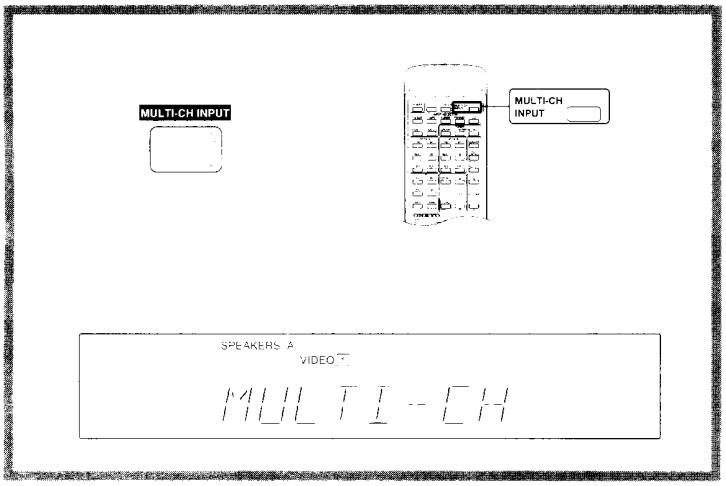
- The selected item is displayed in the display section for five seconds. If the display goes out, you can press the PARAMETER SELECTOR button again.
- The adjusted parameter is stored in the memory for the surround mode in which you set it.



Setting the Hall and Live surround parameters

1. **Use the SURROUND MODE button to select either HALL or LIVE mode.**
2. **Perform steps 5, 6, and 9 of "Setting the Dolby Pro Logic surround parameters" on page 21.**

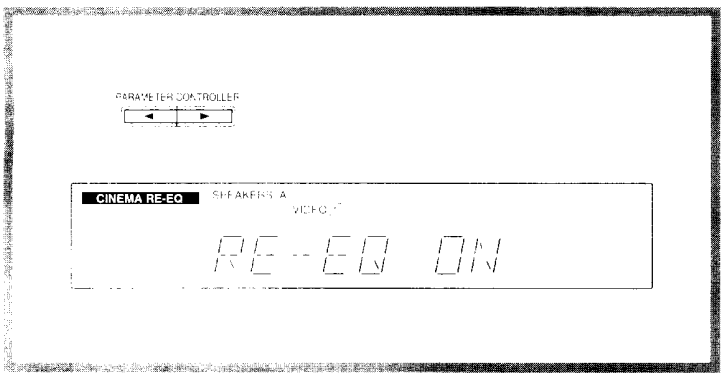
- The test tone function is not provided in this surround mode.



Setting the Multi Channel surround parameters

1. **Press the MULTI-CH INPUT button to put the receiver in MULTI-CH mode. The letters "MULTI-CH" appear on the display.**
2. **Perform steps 3, 6, 8, and 9 of "Setting the Dolby Pro Logic surround parameters" on page 21.**

- The level values set in Dolby Pro Logic mode will be applied to Multi Channels. Changing the level values in Multi Channel mode, however, will not affect any settings for Dolby Pro Logic mode.

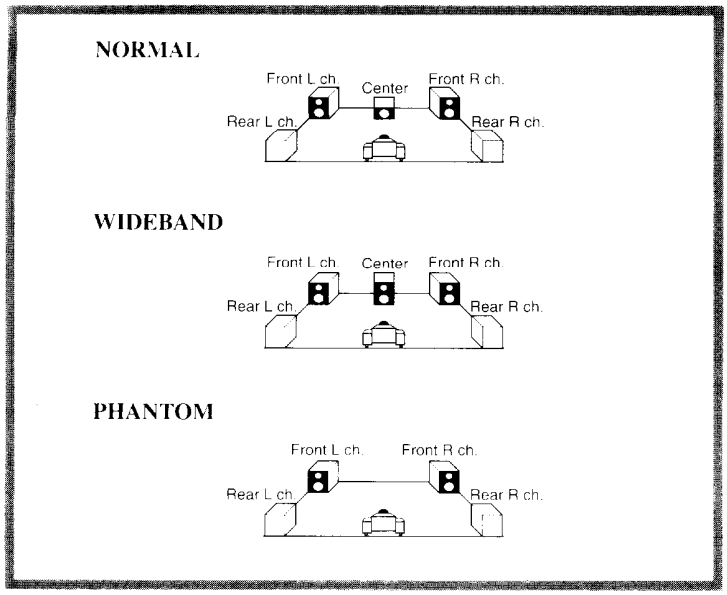


Cinema Re-Equalizer

Motion pictures are produced under the assumption that they will be shown at a large cinema. If they are shown in a small room, the high-frequency range sounds will be overly emphasized, resulting in an uncomfortable sound. If your system is placed in a small room, set the PARAMETER CONTROLLER to "ON" to reproduce an optimal sound for the home theater system.

*Re-EQ is licensed from Lucasfilm Ltd. U.S. patent numbers 5,043,970; 5,189,703; 5,222,059. Foreign patents pending. Lucasfilm and Re-EQ are trademarks of Lucasfilm Ltd.

Setting the surround parameters



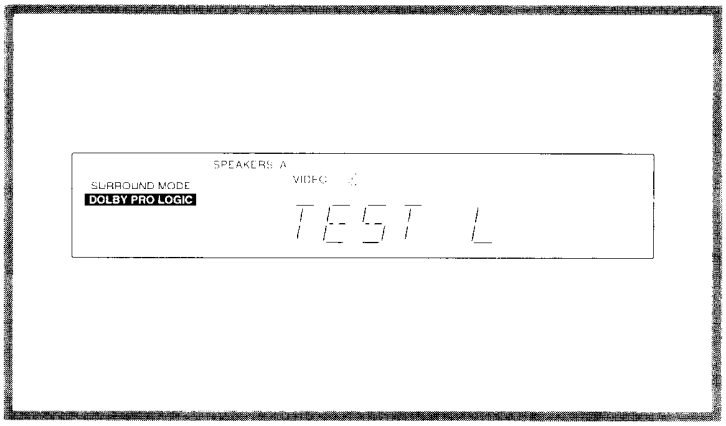
Center mode

Because the center speaker plays such an important part in Dolby Pro Logic Surround, three different modes are available for it, depending on its size.

NORMAL: Use this setting when using a center speaker smaller than the front left and right speakers. The center speaker will not be sent frequencies below 100Hz, and these will be split between the front left and right speakers.

WIDEBAND: Use this setting when using a center speaker similar to the front left and right speakers in size and power. The center speaker will receive the full frequency range.

PHANTOM: Use this setting when a center speaker is not present. The sound that would have been sent to the center speaker will be split between the front left and right speakers, producing a similar result.



Test tone

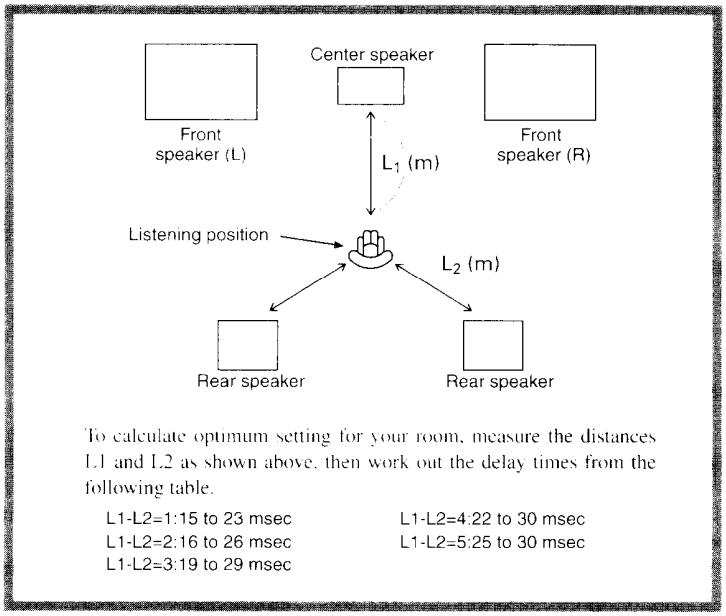
Use the test tone to adjust the volume level of each of the speakers before enjoying Dolby Pro Logic Surround.
The test tone (pink noise) is produced by each speaker in turn so you can match the volume levels of the front, center and rear speakers. The test tone cycling sequence depends on the center mode settings, as follows.

If CENTER MODE is NORMAL or WIDEBAND:

→ Front Left → Center → Front Right → Rear (Surround) →

If CENTER MODE is PHANTOM:

→ Front Left ——→ Front Right ——→ Rear (Surround) →



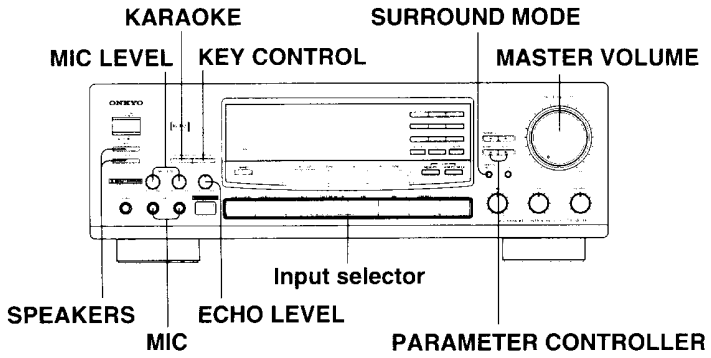
To calculate optimum setting for your room, measure the distances L1 and L2 as shown above, then work out the delay times from the following table.

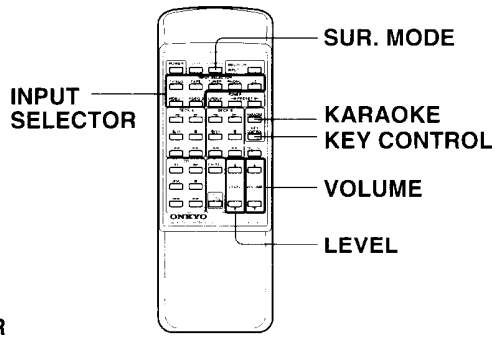
L1-L2=1:15 to 23 msec	L1-L2=4:22 to 30 msec
L1-L2=2:16 to 26 msec	L1-L2=5:25 to 30 msec
L1-L2=3:19 to 29 msec	

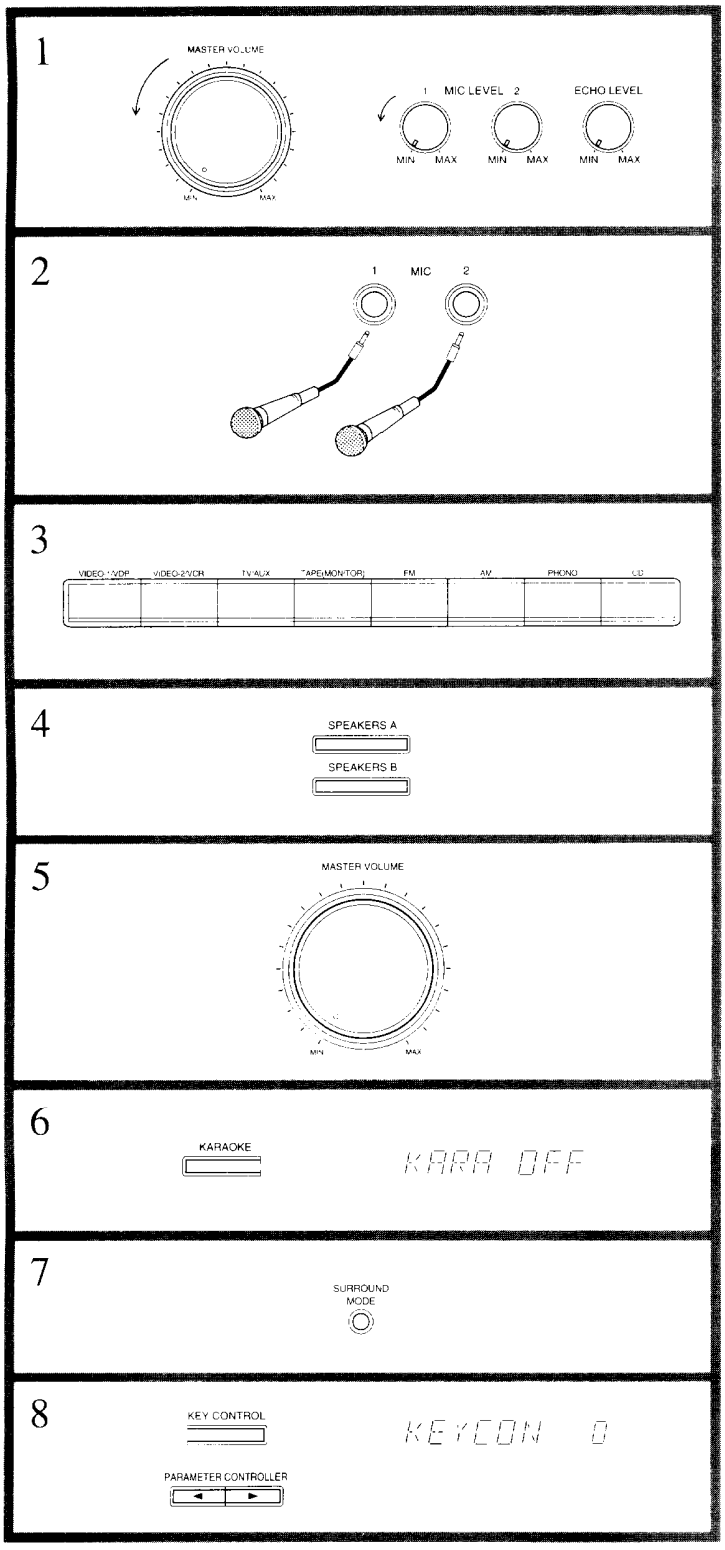
Delay time

By adjusting the delay time, and carefully adjusting master volume level, center volume level, rear volume level, the apparent acoustic size of your listening room can be enlarged or reduced. Adjustable delay time allows you to tailor the accoustic size of your listening enviroment to the sonic characteristics of the audio program, because a short delay in the audio signal coming from the rear speakers gives the impression that it had to travel a longer distance to reach the listener, hence a larger room or hall. Dolby Surround delay time is specified at 20 msec. It is recommended that initial Dolby Surround delay be set at 20 msec, but adjustment from 15 to 30 msec is possible in Dolby Pro Logic and from 5 to 30 msec is possible in Hall or Live.

Karaoke function (TX-SE500 only)







Karaoke operation

All you need to enjoy karaoke with the TX-SE500 is a dynamic-type microphone. The karaoke function cancels the vocals on your favorite CDs and LDs. The amount of cancellation depends on the source material. Vocal cancellation is not possible with mono sources.

The karaoke function cannot be used when the MULTI-CH INPUT button is pressed.

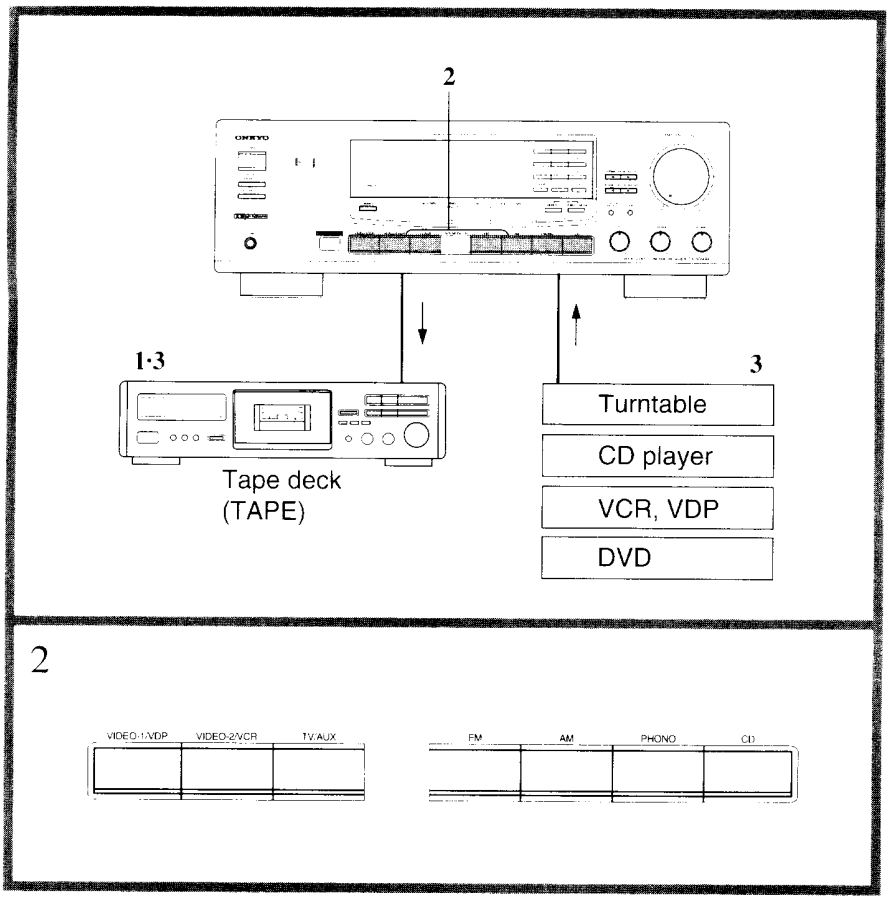
1. **Turn down the MASTER VOLUME, MIC LEVEL, and ECHO LEVEL controls.**
2. **Connect one or two dynamic-type microphones to the MIC 1 and MIC 2 jacks.**
   If you're connecting two microphones, use two with the same specifications.
3. **Use the input selector buttons to select the source that you want to use for karaoke.**
4. **Use the SPEAKERS A and SPEAKERS B buttons to select a speaker system.**
5. **Set the MASTER VOLUME control to a suitable level.**
6. **Press the KARAOKE button. KARAOKE OFF appears on the display, indicating that the karaoke function is in standby mode.**

   Press the KARAOKE button again. VOICE CANCEL OFF appears on the display and the KARAOKE indicator lights up. In this mode, you can sing-a-long with the source vocals.

   Press the KARAOKE button again. VOICE CANCEL ON appears on the display. In this mode, the source vocals are canceled and you can sing karaoke-style.
7. **To add HALL or LIVE surround effects, press the SURROUND MODE button.**
   Dolby Pro Logic cannot be used with the karaoke function. The HALL and LIVE surround settings are stored with the source.
8. **To adjust the pitch of the music in semitone steps (–4 ~ +4), press the KEY CONTROL button, then use the PARAMETER CONTROLLER buttons on the receiver or the LEVEL up/down buttons on the remote controller.**
   The KEY CON indicator lights up when the pitch has been changed.
9. **Adjust the ECHO LEVEL and MIC LEVEL controls to the desired levels.**
   The ECHO LEVEL control determines the amount of echo applied to your voice.
10. **Use the MASTER VOLUME control to adjust the overall volume level.**
11. **When you've finished using the karaoke function, press the KARAOKE button until the KARAOKE indicator goes off. The karaoke function is canceled.**

- When using the karaoke function, keep microphones away from the speakers to prevent howling feedback.
- Disconnect the microphones or turn down the MIC LEVEL when you've finished using the karaoke function.
- Keep the karaoke volume down at night. Think about the neighbors.

Recording a source

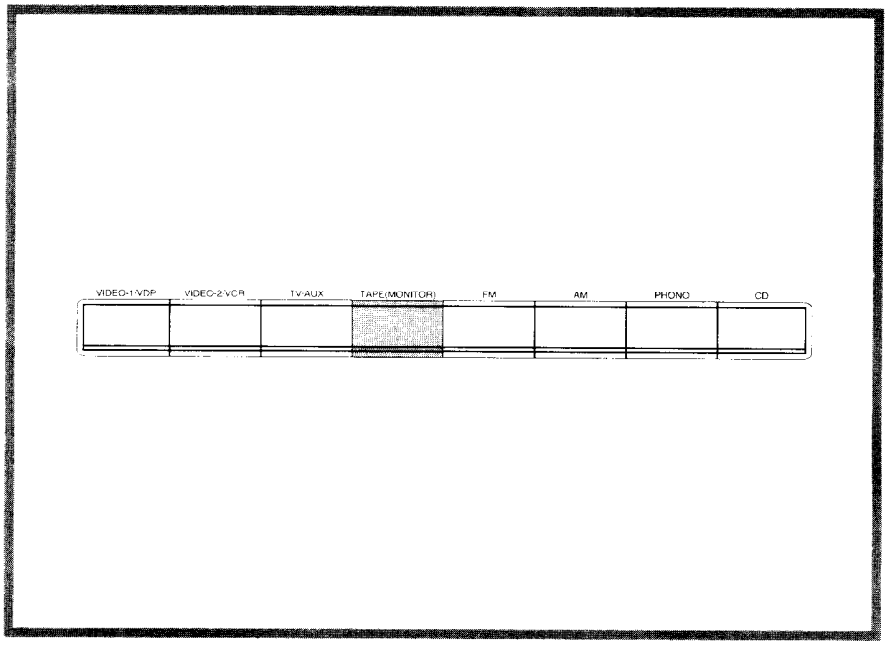


Recording an audio source

Make all connections between the tape deck and the receiver as shown in the "Audio equipment connections" diagram (page 7).

1. **Insert a blank tape into the tape deck.**
2. **Press the input selector button for the source you want to record.**
   - When VIDEO-1/VDP or VIDEO-2/VCR is selected, it will (naturally) only record the audio.
   - When FM or AM is selected, set the tuner to the station you want to record.
3. **Put the tape deck in recording mode. Begin playing the source.**
   Set the proper recording level using the controls on the tape deck used for recording.

- Please read the instruction manuals concerning the operation of each unit.

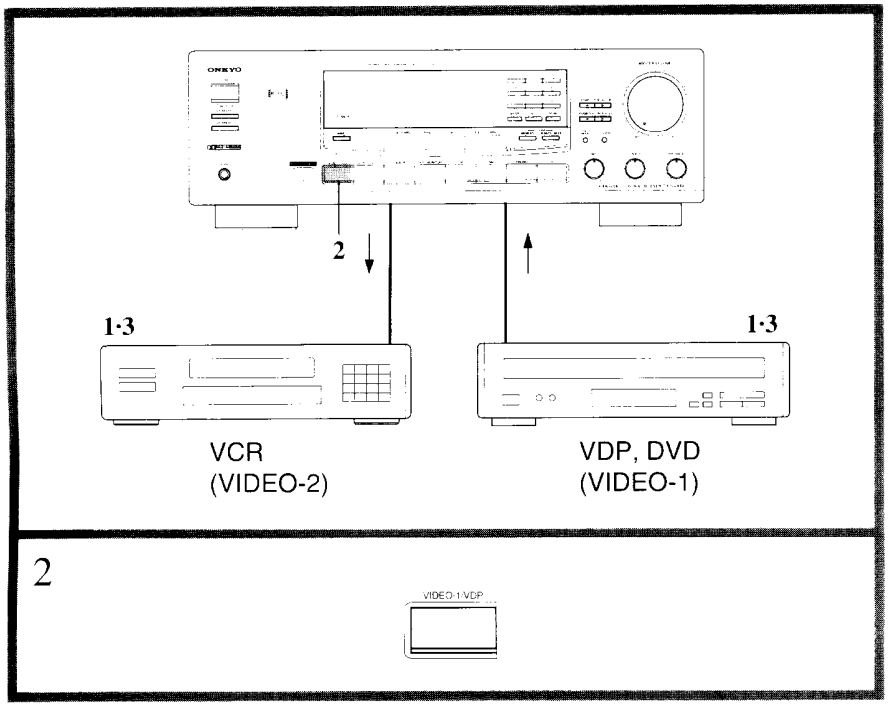


Monitoring

The source signal can be monitored through the speakers or headphones, when TAPE MON. indicator is not lit on the display.

If the tape deck has three heads, the signal just recorded can be monitored:
Press the TAPE button while holding down the recorded source input selector button. The TAPE MON. indicator will be shown on the display.
To stop monitoring, press the TAPE button again while holding down the recorded source input selector button. The TAPE MON. indicator will turn off.

- If the MULTI-CH INPUT button is turned on, the monitor function cannot be used.
- Refer to the tape deck instruction manual for more details.

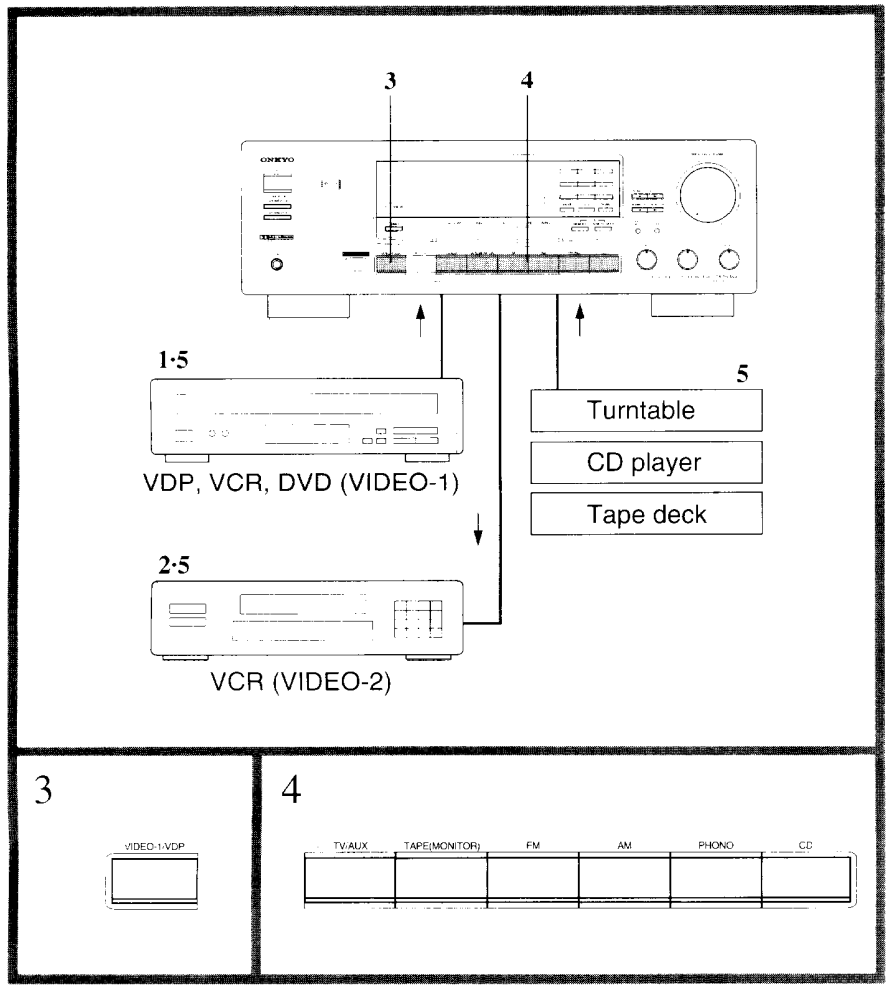


Video disc player (or video camcorder) to VCR recording

Video disc programs can be recorded onto a VCR (VIDEO-2).

1. **Load a disc in the video disc player, and a blank tape in the VCR (VIDEO-2).**
2. **Press the VIDEO-1/VDP button.**
3. **Begin playback on the video disc player and recording on the VCR.**

- Refer to the Video equipment connections on the page 8.



Adding new sound to a video tape during video editing

During video tape editing, you can add the desired sound on the recording VCR from various audio program sources.

1. **Insert the disc or tape that you want to record into the player connected to VIDEO-1.**
2. **Insert a blank video tape in the VCR connected to VIDEO-2.**
3. **Press the VIDEO-1/VDP button.**
4. **Select the audio program source (TV/AUX, TAPE, FM, AM, PHONO, CD).**
5. **Begin playback of the video connected to the VIDEO-1 terminal and also start the sound source. Then start recording on the VCR that is connected to the VIDEO-2 terminal.**

- Refer to the video disc player, video camcorder, DVD or VCR instruction manuals for additional information.

Troubleshooting guide

If a problem occurs while you are using the remote controller, first operate the unit using the front panel controls to confirm that it is not due to a malfunction (or worn out batteries) of the remote controller.

Trouble	Cause	Remedy
No power.	• Power cord is disconnected. • There is external noise in the computer circuits of this unit. • AC fuse blown.	• Connect power cord. • Turn the power button off and then on again of remove the AC plug from the outlet and then plug it again. • Contact your Onkyo Service Center.
Power on but no sound.	• TAPE MON. indicator is lights. • MUTING button is on. • Bad connections. • Amplifier protection circuitry has been activated. ('PROTECT' will be displayed.)	• Press the TAPE button. • Switch to off by the remote controller. • Check connections, speaker leads, etc. • Contact your Onkyo Service Center.
No sound from the center speaker, or very minimal sound.	• Speaker cord is not corrected. • SURROUND MODE button is set to OFF. • CENTER level is set to minimum. • CENTER MODE is set to PHANTOM.	• Check the connection between the amplifier and the speaker. • Set the SURROUND MODE button to DOLBY PRO LOGIC, HALL or LIVE. • Set the CENTER level to the appropriate volume. • Set CENTER MODE to NORMAL or WIDEBAND.
Hum, low-frequency noise.	• Poor or no input ground. • Poor or no phono motor ground. • The placement of the audio connection cables on the rear panel is incorrect.	• Check outer conductor of input plugs. • Check for proper ground connection. • Adjust the placement of the cable to reduce hum.
Howling when the volume is turned up.	• Turntable and speakers are too close together.	• Move them farther apart.
Rough or scratchy sound. High range is not clear.	• Stylus of turntable pick-up is worn. • Turntable stylus tip is dirty. • Treble control too high.	• Replace. • Clean. • Turn treble control down.
AM stations cannot be received.	• AM loop antenna is not attached.	• Connect the included AM loop antenna to the AM antenna terminals.
Buzzing noise on AM (particularly conspicuous at night or with weak stations).	• Noise from electrical apparatus such as fluorescent lamp.	• Move the AM loop antenna to different position. • Set up an outdoor AM antenna.
High-pitched noise or buzzing noise on AM.	• Noise from TV set.	• Place the AM loop antenna as far as possible from the TV. • Move unit away from TV set.
Crackling noise on AM, FM.	• Noise caused by turning fluorescent lamp on and off. • Noise from automobile ignition.	• Move antenna as far as possible from the fluorescent lamp. • Install an FM outdoor antenna as far as possible from the road. • Change the position or direction of the outdoor antenna.
TUNED and STEREO indicators light but sound is distorted and stereo separation is bad.	• Station is too strong. • Multiple reflection of the radio waves because of tall buildings or mountains.	• Change to T-shaped antenna. • Use antenna which has better directivity and select a point where the distortion is least.
TUNED and STEREO indicators flicker and hiss is heard on FM.	• Station is too weak. • Stereo FM broadcasts cover only about half the distance of an ordinary broadcast.	• Install an outdoor FM antenna. • Change the position or direction of the outdoor antenna.
No station is recalled when a SCAN button is pressed.	• The power cord has been unplugged for a long time.	• The memory contents are lost. Store all stations again.
Front panel controls function but remote controller does not.	• No batteries in remote controller. • Batteries have worn out.	• Insert batteries. • Replace batteries.
Your voice is not heard through the microphone.	• Microphone plug is not firmly inserted into the MIC jack. • Microphone is turned off. • The karaoke function is in standby mode or turned off.	• Insert the plug firmly. • Turn on the power to the microphone. • Set the KARAOKE button to turn on the KARAOKE indicator.
The sound of the playback source is not heard.	• The input selector is not set properly.	• Set it to the playback source.

• Also refer to the respective instruction manuals of the video disc player, video cassette recorder, TV monitor, etc., being used.

Specifications

AMPLIFIER SECTION

Power Output	
Stereo mode	
Front L/R channels:	70 watts per channel, min. RMS at 8 ohms, both channels driven from 20 Hz to 20 kHz with no more than 0.08% total harmonic distortion.
Continuous Power output:	2 × 80 watts at 8 ohms, 1 kHz (DIN)
Surround mode	
Front L/R and Center channels:	60 watts per channel, min. RMS at 8 ohms, both channels driven from 20 Hz to 20 kHz with no more than 0.08% total harmonic distortion.
Rear channels (Rear only driven):	20 watts per channel, min. RMS at 8 ohms, both channels driven from 20 Hz to 20 kHz with no more than 0.3% total harmonic distortion.
Total Harmonic Distortion:	0.08% at rated power (Front)
IM Distortion:	0.08% at rated power (Front)
Damping Factor:	60 at 8 ohms (Front)
Sensitivity and Impedance	
Phono:	2.5 mV/50 kohms
CD, Multi-CH, Tape Play:	150 mV/50 kohms
Tape Rec:	150 mV/2.2 kohms
Subwoofer Pre out:	2 V/2.2 kohms
Phono Overload:	120 mV RMS at 1 kHz, 0.5% T.H.D.
Frequency Response:	20 Hz to 30 kHz, ±1 dB
RIAA Deviation:	20 Hz to 20 kHz, ±0.8 dB
Tone Control	
Bass:	±10 dB at 100 Hz
Treble:	±10 dB at 10 kHz
Signal-to-Noise Ratio	
Phono:	80 dB (IHF A, 5 mV input)
CD/Tape:	100 dB (IHF A)

VIDEO SECTION

Signal sensitivity and impedance:	1 Vp-p, 75 ohms (VDP/VCR input, output)

TUNER SECTION

FM

Tuning Range:	87.5 — 108.0 MHz
Usable Sensitivity	
Mono:	11.2 dBf, 1.0 µV (75 ohms)
Stereo:	18.2 dBf, 2.2 µV (75 ohms)
50 dB Quieting Sensitivity	
Mono:	18.2 dBf, 2.2 µV (75 ohms)
Stereo:	39.2 dBf, 24 µV (75 ohms)
Capture Ratio:	1.5 dB
Image Rejection Ratio	
U.S.A. & Canadian models:	40 dB
Other area models:	85 dB
IF Rejection Ratio:	90 dB
Signal-to-Noise Ratio	
Mono:	73 dB
Stereo:	67 dB
Alternate Channel Attenuation:	55 dB
Selectivity:	50 dB (DIN)
AM Suppression Ratio:	50 dB
Total Harmonic Distortion	
Mono:	0.15%
Stereo:	0.25%
Frequency Response:	30 Hz — 15 kHz, ±1.5 dB
Stereo Separation:	45 dB at 1 kHz 30 dB at 100 Hz — 10 kHz

AM

Tuning Range	
U.S.A. & Canadian models:	530—1,710 kHz (10 kHz steps)
European & Australian models:	522—1,611 kHz (9 kHz steps)
Worldwide models:	531—1,602 kHz (9 kHz steps), 530—1,710 kHz (10 kHz steps)
Usable Sensitivity:	30 µV
Image Rejection Ratio:	40 dB
IF Rejection Ratio:	40 dB
Signal-to-Noise Ratio:	40 dB
Total Harmonic Distortion:	0.7%

GENERAL

Power Supply	
U.S.A. & Canadian models:	AC 120 V, 60 Hz
European & Australian models:	AC 230 V, 50 Hz
Worldwide models:	AC 220-230 V and 120 V switchable, 50/60 Hz
Power Consumption	
U.S.A. & Canadian models:	3.5 A (420 W)
Other area models:	250 W
Dimensions (W × H × D):	435 × 150 × 322 mm 17-1/8" × 5-7/8" × 12-11/16"
Weight:	9.6 kg, 21.2 lbs.

REMOTE CONTROL

Transmitter:	Infrared
Signal range:	Approx. 5 meters, 16 ft.
Power supply:	Two "AA" batteries (1.5 V × 2)
Dimensions (W × H × D):	65 × 18 × 194 mm 2-9/16" × 11/16" × 7-5/8"
Weight:	110 grams, 3.9 oz. (including batteries)

Specifications and features are subject to change without notice.

ONKYO CORPORATION
Sales & Product Planning Div. : 2-1, Nisshin-cho, Neyagawa-shi, OSAKA 572, JAPAN
Tel: 0720-31-8111 Fax: 0720-33-5222

ONKYO U.S.A. CORPORATION
200 Williams Drive, Ramsey, N.J. 07446, U.S.A.
Tel: 201-825-7950 Fax: 201-825-8150 E-mail: onkyo@onkyousa.com

ONKYO EUROPE ELECTRONICS GmbH
Industriestrasse 18-20, 82110 Germering, GERMANY
Tel: 089 84 93 20 Fax: 089 84 93 226

ONKYO FRANCE
Immeuble Le Diamant, Domaine Technologique de Saclay, 4 Rue René Razel,
91892 SACLAY, FRANCE
Tel:(1) 69 33 14 00 Fax: (1) 69 41 35 84

ONKYO HOMEPAGE
http://www.onkyo.co.jp/

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